The OPEN COURT

Devoted to the Science of Religion, the Religion of Science, and the Extension of the Religious Parliament Idea

FOUNDED BY EDWARD C. HEGELER

AUGUST, 1931

VOLUME XLV NUMBER 903

Price 20 Cents

The Open Court Publishing Company

Wieboldt Hall, 339 East Chicago Avenue

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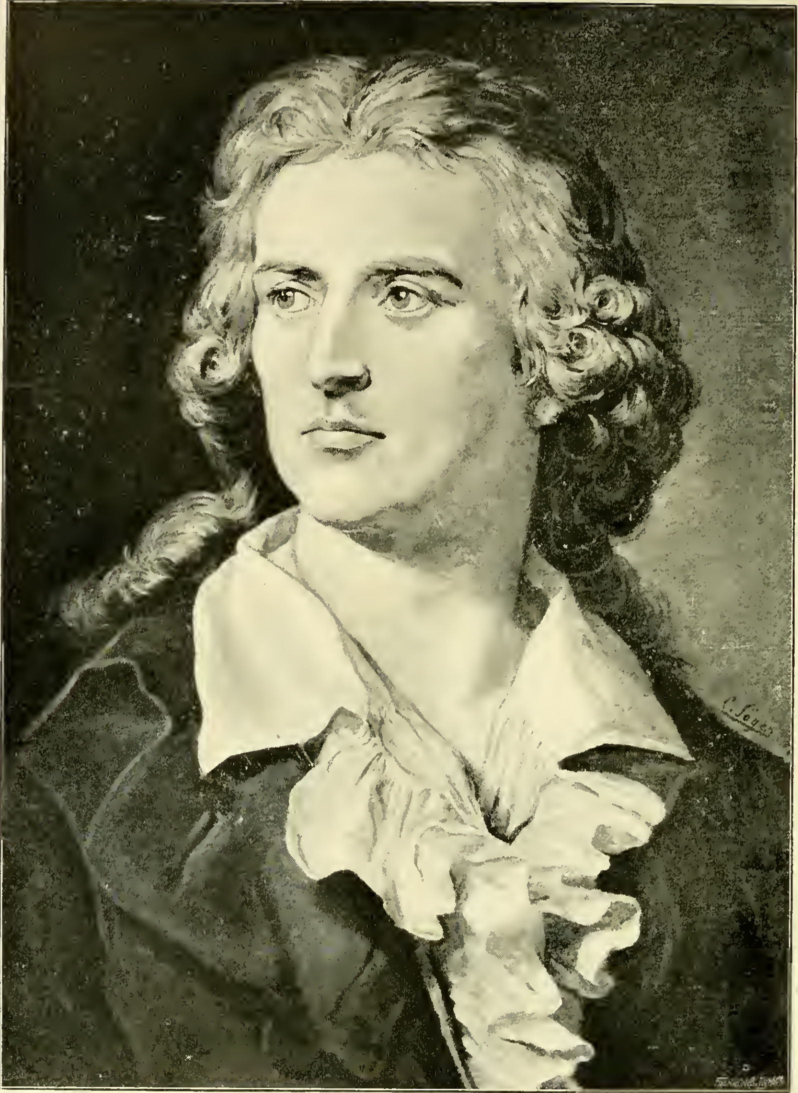

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Volume XLV (No. 8) AUGUST, 1931 Number 903

A GREAT ETHICAL POEM: SCHILLER'S "IDEAL UND DAS LEBEN"

BY WILLIAM NORMAN GUTHERIE

THERE has been of late much discussion of Keats' paradox, "Beauty is truth, truth beauty." No more irritating granite boulder was ever found in the honey-jar of supposedly innocent "art for art's sake" poetry. J. Middleton Murry has delicately solved the problem it raises, in his "Keats and Shakespeare," and his "Studies in Keats," recently published by the Oxford Press.

Perhaps, indeed, our philosophers in England are addressing themselves over-seriously to the dissection of Keats. To think of our beloved enchanter as a constructive metaphysician, seems almost amusing. And yet how could it be otherwise than that a serious, ambitious, highly gifted youth should ponder in his own fresh amateur way the perennial problems of the universe? Whoever thinks he can be excused from systematic thought, because he is an artist, or a practical scientist, is merely depriving himself of the aids to reflection that have been created by an agelong succession of great thinkers. There is no escape for the poet, whose art uses language, from ethical and philosophical inferences. His words themselves bear independent witness to the spiritual travail of their users. I suppose that not even a nonsense rhymer could escape meaning, and meaning again suggests further meaning, if the words themselves be worthy to hold attention. From meaning to meaning, we will pass on, then, until we glimpse the horizon, or look up awe-struck to the zenith. Always the destiny of man, individual, social, racial, will sooner or later force itself upon the most unwilling mind. A butterfly, a briar-rose, a cat-bird, the wind in the spring trees, a glimpse of the sea—any topic, however remote, and the problem of eternity is sprung. It is impossible to

be an "art for art's sake" artist seriously, or with fine deliberate flippancy, producing things of beauty, and not surprise or appall the reader with long, long thoughts of love, of death, of shame and glory.

No one probably likes "didactic verse" less than the present writer. There was a time, to be sure, when it had its excellent *raison d'être*. Verse itself was no doubt primarily mnemonic. It was to recall to mind that words were ordered rhythmically; that the jingle of initial or final rhyme marked the beat; that phrases were balanced in the deadly parallel, life-giving to the proverbial commonplace.

But man soon found that he wanted to remember other things besides saws, gnomic judgments and oracles. There were ancestral heroes to celebrate; so the epic muse began her creative work. She perpetuated ideals. She created, by fame and infamy, a system of rewards and punishments. It was an awful thing to fall into disfavor with the blind Homer. Now to this very day do not Achilles and Hector, Helen and Nausicaa live, with a life so much more significant than that of the list of our Presidential worthies, for instance, or Chief Justices? A few more centuries, and we will have to dig up Hoover, but we will have to take no such trouble with Odysseus, his fair spouse, or his island enchantress!

Thus poetry was to men the first giver of immortality. And yet, even so, busy with men and women, it dealt far more profoundly, because half-consciously at best, with the meaning of life. What in man was worthy of worship? So it was that the poets fashioned the gods, and the gods in turn created, and solemnized institutions.

However modern we may be and impatient of control outside our own consciousness, the wisdom that comes winsomely finds a ready welcome. The prophet must be the poet, or his own children shall not remember his doctrine. And even blunders can be of service, when an interpolated whale can keep Jonah to the forefront of discussion, and a fictitious turkey make the meanest moron acquainted with Job!

What the poets, then, may think on the great themes, cannot but be contagious. True, it is not their gift as poets warrants their philosophy, but their genius may somehow sift the current evidence for them, and give them insight, where other men are blind,

overwhelmed with too much learning or fear of displaying their lack thereof. And facts, among men of genius, are verbally articulate. So the supreme poets, in quest of beauty, may be ravished by wisdom on the way,—and ravish us in turn.

In these times, we are most suspicious of the stoic appeal. We do not want to hear of principles. We suspect discipline. We forget the athletic origin of ascetic theory. Yet if we read German, how can we escape the splendor of Schiller's finest work,—escape its subtle magic of rhythm and phrase? His fury and fervor of enthusiasm for noble ends? His rapture in the mere memory of genius? Those of us who were subjected to the spell in our boyhood cannot willingly forget all that it meant to us then. A poet who was popular in the best sense, appealing to youth, and at the same time sober, priestly, prophetic, historically and philosophically serious, but above all things endowed with that irresistible magic for which there is no formula, and from which there is as yet no rational protection, cannot but hold his own. Unluckily for English readers, Bowring, and even Arnold-Forster, have not succeeded in transferring to our language Schiller's "Cranes of Ibycus," with all the somber terror of the original. We have not shuddered as we should, watching the tramp and stamp of the Æschylean chorus of the Eumenides. "The Gods of Greece" have not moved us to pathetic yearning for the blessed days gone by, as they should. "The Diver," "The Ring of Polycrates," "The Fight with the Dragon"—none of these leap from the English page with dominant power over our pulses, and guide our passions unawares by ways of security to peace. The somber awe and anguish (as of a play of Ford and one of Webster fused, with something of the hammer of Kipling beating time for cataracts of Swinburnian euphony) in the choruses of that tale of chaste incest, "The Bride of Messina," have permanently taken possession of our deepest selves as Poe with his more ghastly and obvious shudders never could.

They, then, who have not in a German-reading boyhood known Schiller, walked with him in the "Walk," danced with him in his "Dance," and bowed with him to "Genius," defying "Fortune," cannot be expected perhaps to share altogether with us the reverence we feel for "Life and the Ideal." But maybe they will not object to have one more effort made, honestly, on their behalf, to transfer something of its enthusiasm, conveyed through lines of

English words, ordered as faithfully as may be to the verse form of the original.

This supreme ethical poem of Schiller concludes with a noble picture of Herakles, so that for thirteen stanzas we are merely climbing step by step to reach a height whence we may see the heaven of Zeus open to us, and the Queen of Heaven, blue-eyed Hera, bow down to greet him whom she has persecuted, only that he might mount the nobler from his self-lit pyre, and be wedded to Hebe in the Olympian presence, where all the gods do honor to what in man is mightiest, most resolute, most aspiring,—tho' never, in false asceticism, resigned to forego beauty and joy at the end.

Like Browning's "Childe Roland to the Dark Tower Came," the doctrine of the poem appeals only to the valiant. It is explicit, however, and hence perhaps the modern reader will not respond to it altogether so mystically. May be he would rather have his moral sanctions Hugoesquely delivered in one great gesture of the creative finger, or uttered in one shrill shriek of "Fiat Lux!" Perhaps the modern prefers to read once again Rudyard Kipling's outmoded "If," and have his duty set forth to him with Anglo-Saxon balance. Yet even so, if he is for achievement's sake prepared for abstinences, and inured by sheer sportsmanship to disciplines, and resolved, if need be, to self-immolation for the sake of that high irrational lure of derring-do, he may undertake to become imaginatively a companion in deed and truth of Herakles, so as to pass at the last with him from sacrificial labors into the heaven of triumphant thought, upborne by the very flames kindled of the world's consuming fire. For that pyre of Herakles is only in small the cosmic Ragnarock that prepares for the new green world of golden-haired, apple-cheeked Baldur, and Nanda, his beloved, who followed him in death and now rises hand in hand with him to fairer life. That pyre is symbolically identical with Elijah's chariot of the snorting steeds, and also with the transfiguring bolt of Zeus, that upbore the blind, Lear-like King, in Sophocles' "Œdipus Coloneus," above the too great woes of outcast age.

Here, then, is our best result of many years of labor, often dropped, only to be resumed; not the poem itself, alas, the stanzas interrupted by a prose analysis—but the shadow it has cast over a life progressively devoted to keeping fresh the tradition of truth and beauty as at their worthiest only when one with each other, crowning virtue with worship.

LIFE AND THE IDEAL

I.

Because of the limitations of our body and person, we are forced to the cruel choice between sense enjoyment and soul contentment.

Ever crystal-fair and zephyr-soft
Life glideth calmly by, where throne aloft
    The blessèd Gods on heights Olympian;
Moons wax and wane,—folk-kindreds come and go—
But still the roses of their youth will blow
    Changeless 'mid wreck of worlds. Ah me, and man
Confronts the Choice (doubtful at best, and sad)
    Between a thrill of sense—and peace of soul!
The brows of the high Gods alone are glad
    Of these twain, wedded to one joyous whole.

II.

Let us not then bind ourselves over as slaves to sense.

O sons of men, even here and now would ye
Be like the Gods in Death's dominion—free?
    Then pluck none of his garden's luring fruit.
On the fair show of things delight your eye;
Possession yieldeth joys that straightway die,
    And slayeth sweet desire in swift pursuit.
Yea, Styx, Demeter's child with black folds nine
    Of fathomless stagnant water, could not hold:
For that she took death's apple, must she pine,
    Chained to the grisly law of Orcus cold.

III.

Yet even now we may elect to establish our residence in the heavenly city.

Howbeit the powers, that weave our darkling fate,
Beyond this body cannot wreak their hate;
    Unbound by tyrannies of time and space,
Playmate of happy sprites o'er fields of day,
Familiar of the Gods, divine as they,
    Form moveth, haloed of immortal grace.
Would ye soar thither, wafted of her wings,
Ev'n now? Forthwith, earth's fears beneath you hurled,
Breaking the clutch of narrow dismal things,
    From life take flight into the Ideal world!

IV.

There may we commune with the Ideal of man and by faith anticipate the victory of our holy causes.

Young yonder abideth ever, without flaw
Or earthly blemish—in radiance and awe
Of perfect bloom—the human Form divine:
As fared the shades by Stygian marges dumb
In calm sheen through a fabled Elysiùm;
Rather, as stood—the azure for his shrine—
The eternal Soul ere to the fleshly tomb
She made descent out of her glorious place,
When the scales of battle in life tremble with doom,
There victory greets thee, smiling, face to face.

V.

Yet our citizenship in the Kingdom of the Spirit must not relax our efforts on earth, but only increase or renew our strength and courage.

Not craven limbs to rescue from the strife,
But to refresh the living with new life,
See, Victory waves her fragrant garland thus!
Implacable, howe'er ye yearn for rest,
Life hurtleth you on her steep-billowy breast
While swift time swirleth 'round uproarious.
But should your courage waver—her quivering wings
Adroop for the dread sense of limits dire—
Look up to yonder heights, where Beauty brings
Unto their goal your spirit, that dared aspire!

VI.

This world below is so ordered that for sport or work alike none can succeed save at cost of strength, skill and courage, else would weakness, incompetency and cowardice prevail.

When war is wag'd for lordship or defence—
Champion eyes champion, grappling might immense
With defter might—at fortune's call or fame's—
Bare-handed Valor ill copeth with armed force;
Likewise where chariots o'er the dust-chok'd course
Shatter each other in th' heroic games,
Courage alone can wrest him prize and praise
That beckon from far goals attain'd; alone
The Strong may master fate, while all his days
The dastard weakling shall his fall bemoan.

VII.

Yet it is the capable brave who most often require to rest, and to realize the stillness and sweetness that mark the larger life.

Yet see, the River of life,—tho' hurling fierce
Torrents of foam where crags close-hem and pierce
His stream,—floweth smooth, gentle, sinuous
Thro' visionary calm of Beauty's vale,
Mirroring on his silver edges pale
Aurora blithe, or twinkling Hesperus!
Dissolv'd in gracious mutual love, and bound
Together freely in bands of comeliness,
Here impulse hath, and passion, respite found.
And foes ban ire, sweet fellowship to bless.

VIII.

No fashioner of beauty can presume on his easier access to the world of imagination. If he would glorify the Ideal he beholds, he must endure hardship.

When fashioning Genius would a soul create
In what ere then was lifeless—fain to mate
Pure Form with Substance at his urgent will—
Bid manful diligence strain every nerve,
Bid courage vanquish matter, till it serve,
And the whole purpose of the Thought fulfill:
Only stern toil, and stubborn quest shall hear
The murmur'd runes from deep-hid wells of truth;
Only the chisel's valiant stroke lays bare
What lurks within the marble block uncouth.

IX

If, however, he should lose vision and confidence, he may behold his work already perfect in ideal pre-existence—the pattern on the Mount—and so be enabled to toil the better for its partial realization here.

But if to Beauty's realm thou penetrate,
Below Sloth tarrieth with leaden weight
Amid the dust, in the heavy clod it sways.
Wrung with no aching toil from the crude mass
Behold, there,—sprung from nothing, come to pass
Even of herself—thy Vision beyond praise!
Quell'd be thy struggle, all thy doubt allayed
In a serene content at mastery won;
For now, no trace is left of what betrayed
A human frailty in the work begun!

X.

All are in the truest sense artists, fashioners of their own character, and awful indeed is the discovery of the inevitable discrepancy between principle and performance.

Whenso in man's poor nakedness ye face
The majesty of law, your pride abase;
Even to the *Holy One* guilt draweth nigh.
Well may stout virtue quail before the rays
Of steadfast truth, and with averted gaze
Your deeds avoid the Perfect's penetrant eye.
For never mortal but his aim must miss.
No boat may ferry, and no bridge may bear
Athwart yon frightful sundering abyss;
Nor soundeth anchor its swallowing despair.

XI.

But even now our mystic faith can afford comfort and consolation, for by union with Divinity man may within himself adore his God, and share in some degree his bliss.

Up, and take sanctuary from imprisoning sense
In the far freedom of high thought,—for thence
Hath every fear-begotten phantom flown;
The gap 'twixt purpose and achievement fills.
Draw then the God into your inmost wills,
And he forsakes for you his cosmic throne.
None but the slave's mind balks at fettering sway,
Who of the law hath scorn'd the chastening rod;
For lo, with man's resistance pass away
Likewise the threatful sovereignties of God.

XII.

Nevertheless, we are not God, save in aspiration, and must feel as our own the woes and iniquities of our fellows, so that at times we are driven to rebel, until our very desire for communion with God will fail.

When the vast anguish of the human race
Harroweth, and Laocoön's tortured face
Of dumb woe, throttled by the monster snake,
Ye front; 'tis right your manhood should rebel,
And unto heaven proclaim the griefs of hell
Until your heart for rueful sorrow break.
'Tis well that Nature's voice of dread prevail,
And pallid youth grieve with tear-blinded eyes;
That death-pangs should your deathless Self assail,
When ye for fellow-feeling agonize.

XIII.

Yet in due time we learn that all human evil may be made to bear fruit in higher good, and the sufferer be transfigured to a thing divine.

Yet nevermore in yon sun-happy realm,
Where the pure Forms abide, shall overwhelm
The mind such turbid wash of human woe.
There may not pain thro' the soul's armor pierce,
Nor blighting tears be shed. Earth's fury fierce
Lives only in the spirit's battle-glow—
Lovely, as hover shimmering rainbow hues
Over the thunderous rack with sprightly glee;
So thro' cloud-veils of moody gloom transfuse
Bright skies of cheer, and fair felicity!

XIV.

So at least the old Hellenic myth teaches: The Divinely Begotten was persecuted only to challenge and bring to fuller manifestation the hidden God in him.

Such lore the antique myth to men made plain:—
How Zeus of yore did Herakles constrain
To serve the coward, and bear his rule unjust;
Humbl'd he track'd life's footsore ways, and fought
Unceasing; lion and hydra slaying, wrought
With his own hands huge labors; yea, and thrust
His body alive in Charon's doleful bark
Dear friends to loose. Dire plagues and burdens great
Hera devis'd, and grievous care and cark—
Yet ever his fortitude outsped her hate:

XV.

Wherefore, when he had fully established his divine sonship, he reconciled mankind to his inevitable passion and their own.

Until his course was run; until in fire
Stripping the earthly raiment, on the pyre
The hero, freed, breath'd Empyréan airs;
Blithe-hearted at his new-got power of flight,
Upward he soared from joyful height to height,
While down as an ill dream sank earth's dull cares.
Olympian harmonies the Man enfold,
Transfigur'd in the shining hall of Zeus.
With smile and blush, the Goddess, see, doth hold
To his lips at length her cup of heavenly bliss!

RELIGIOUS IMPLICATIONS OF EVOLUTION

BY EDWARD O. SISSON

WE may well at the outset recall two or three points which are prerequisite to a clear view of our problem. First as to the role of Darwin himself, and the reason why his name is so interwoven in the whole concept of evolution that to many people Darwinism and evolution are synonymous terms. We know of course that Darwin did not originate the idea of evolution, which is on the contrary at least as old as Aristotle; Darwin entered the arena at a time when the progress of science had begun to throw an intense light upon the theory, and when scientists were keenly awake to its significance and eager for facts and for any reasonable hypotheses bearing upon it. This is most strikingly evidenced by Wallace's wholly independent and almost identical formulation of the theory of natural selection.

Darwin did three distinctive things: (1) first he surpassed all his predecessors in his tireless and long-continued amassing and organizing of facts; he ransacked earth and sea and air for details of plant and animal life, and marshalled his army of facts with consummate skill and boldness. After the issue even of his first book it was impossible to ignore his utterances, and the eyes of the whole scientific world were fixed upon him. The shades of Aristotle and Francis Bacon must have gloried in his magnificent survey of the living world.

(2) Second he put forth the first clear and definite theory of the *modus operandi* of evolution—the way species originate. This was his theory of natural selection, based upon the struggle for existence. This theory is so simple in form that a child can understand it, and so intimately related to the commonest facts of life that its logic is almost irresistible; it is a notorious fact that in

spite of Darwin's own extreme modesty and scrupulous caution, the doctrine was almost immediately seized by less cautious hands and carried far beyond Darwin's sound conclusions, to the grave detriment of the cause as a whole. Moreover the theory of natural selection, as based upon the struggle for existence, was at once seen to have unavoidable bearings upon the whole philosophy of life and the universe, including the theme we are now discussing, its relation to religion and morals.

(3) Finally, Darwin placed man unequivocally under the principle of evolution, and marshalled an invincible array of facts to establish his descent from lower forms and, incidentally, to show his close relationship with the apes. This very last point, biologically only a detail, nevertheless quite naturally so shocked the minds of people in general that it became to them the sum total of both Darwinism and evolution, and even today it is probable that the majority of all persons who know the name of Darwin at all, think first and last of monkeys. It was of course this last point in Darwin's teachings that raised a furious storm of protest and precipitated the war between evolutionists and anti-evolutionists which raged with such fury for more than half a century.

This story, so familiar to all, is repeated here to insure a clear picture of the joining of the issue in the great fight. While Darwin provided practically all the original proposals, it was really Huxley who carried on the war. He called himself "Darwin's bull-dog." Darwin quietly abandoned his earlier orthodox theological views, and shunned religious controversy; Huxley coined the term agnostic to describe and declare his own opposition to the whole body of dogmatic theology, and mercilessly hammered his opponents with his formidable biological logic. He was as polemic as his friend Darwin was eirenic, and loved nothing better than to carry the war far into the enemy's territory. When we are inclined to wonder at the persistence and recrudescence of anti-evolutionism, this history of the early conflicts may afford some light.

For some years back the United States has been the scene of an extraordinary recrudescence of the religious conflict over evolution, so peculiar to us as to fill people in other lands with amazement. Into this unhappy controversy over evolution I desire to interject the following striking utterance concerning the destructive effects of modern science, and particularly of Darwinism, up-

on morals and religion,—a piece of testimony which I have not seen used or quoted by any of the contestants:

> "Never in the history of man has so terrific a calamity befallen the race as that which all who look may now behold advancing as a deluge, black with destruction, resistless in might, uprooting our most cherished hopes, engulfing our most precious creed, and burying our highest life in mindless destruction."

I offer these astounding words freely to both parties in the present battle royal over evolution; yet I doubt whether either side will welcome the testimony: for to one side the witness may seem a traitor to the cause which he and they represent; and to the other side he will be under suspicion,—they will 'fear a Greek, even tho he brings gifts.'

Yet the testimony should have a powerful appeal and great authority for both parties: to the anti-evolutionist because of its passionate and eloquent utterance of his view of the case; and to the evolutionist because the speaker is himself a devoted admirer and disciple of Darwin, and one of the most notable of his successors in the study of the evolutionary process. For these are the words of *George John Romanes*,[1] renowned biologist, one of the protagonists of the principles of evolution, and, what is deeply significant, the leader in applying these principles in the spiritual field,—the evolution of *mind*. Moreover this tragic verdict was recorded not at the first startling appearance of the Darwinian theory, before men's minds had had time to recover from the shock and readjust their conceptions to it, but in 1878, twenty years after the appearance of the "Origin of Species," and nineteen years after the "Descent of Man."

I use these words of Romanes for a point of departure: they seem to me to carry a profound lesson to both sides of the evolution controversy; and what is still more important, to point to certain healing and unifying phases of the question at issue. The first and plainest lesson is that the honest opponents of evolution must not be set down as mere fools or bigots,—fools and bigots doubtless find their way into the anti-evolutionist camp, and heavily handicap its cause; but it would hardly be safe to give the evolutionist

[1] *Candid Examination of Theism* (Boston, 1878), p. 51; also quoted in *Darwin and Modern Science* (Cambridge University Press 1909), p. 486.

camp a clear bill on this score. If Romanes could think and feel so powerfully as his words indicate concerning the moral and religious consequences of modern science, even after he had spent years in studying the problem, why should we be surprised that there are men today in plenty who shudder at evolution and feel themselves divinely commissioned to fight its maleficent influence?

For these words of this brilliant evolutionist really sum up the indictment which saner fundamentalists bring against evolution, and which many of the less intelligent "feel in their bones." The evolutionists today will never understand the passionate antagonism of the anti-evolutionists until they get a far better conception of the ominous fears which the mind of Romanes felt with painful clearness, and which, in vague and cloudy form yet no less menacing, beset the minds of many men and women today.

On the other hand, and for the special notice of the anti-evolutionists, we must remember that Romanes was but thirty years old when he made his despairing prediction of the destructive results to flow from Darwinism: he lived to see that his fears were exaggerated, and to realize in part at least, and indeed help to build, the truth which we may today see with ever-growing clearness, that the doctrine of evolution does not destroy but rather enhances and justifies the hopes and aspirations of religion and ethics.

Let us then consider the great fears which Darwin's work stirred in men's minds concerning religion and morals, and which are still the main basis for the aversion which great numbers of honest and well-intentioned men and women, many of them intelligent enough in other fields, manifest toward the whole doctrine of evolution. After that we may endeavor to unravel some of the misunderstandings and confusion by virtue of which these fears continue to tyrannize over men's minds long after their original grounds have been wholly or largely removed.

There were and still are three of these fears: and they are all shadowed forth in Romanes' words. First is fear of *the loss of God* as the divine Creator and Conserver of the universe, and the handing over of all things to the dominion of blind forces, in particular to one ruthless and inhuman force known vaguely as "the struggle for existence." Second is fear of *the degradation of man* to the status of a mere animal and consequently the abrogation of his di-

vine Sonship and glorious destiny. Third is fear *of the break-down of ethics,* both in theory and practice, thru the triumph of the same force which has ousted the Creator: struggle for existence, the "reign of tooth and claw," and the defeat of every claim of altruism or idealism.

These were the horrid portents that forced themselves upon the sensitive soul of Romanes and impelled him to the eloquent and tragic utterance quoted above. We cite him in passing as a veritable hero of faith in that despite these specters, he drove straight forward in his search for truth; his conduct seemed to say, in the words of holy writ, "Though He slay me, yet will I trust Him." How much more truly religious than to take refuge in evasion or denial of the results of the use of reason!

First, then, men feared that natural selection had displaced God as Creator: that all creatures, including man himself, had been "evolved" by this new impersonal agency, not only undivine, but actually inhuman. If we are to understand this fear we must remind ourselves that the very concept of "creation" was at that time mirrored in men's minds from the type of story represented by the book of Genesis with its details of order and time, and its definitive and punctuated periods. The aggressive evolutionists, such as Huxley, nicknamed this concept "the carpenter theory," and easily made it the butt of ridicule. Nor can it be denied that many advocates of the new doctrine went far beyond the restrained and modest conclusions of Darwin, and often made a clean sweep of the whole divine element in the origin of the universe. Huxley himself, "Darwin's bull-dog," supplemented scientific argument with vigorous denunciation of his adversaries. Many a man who now lives comfortably with a thorogoing belief in evolution can still recall the chill and shock of the suspicion that after all the world had, like Topsy, "just growed," and that all its marvel and beauty witnessed not to an omnipotent and eternal God but only to two vague abstractions, one of them, "Natural Selection," cold and negative, the other, "Struggle for Existence," cruel and ruthless. I do not see how anyone can doubt that Romanes' own mind was tortured by this specter of a Godless universe.

The second fear was as clearly grounded as the first: if man was offspring of a "lower animal," how should he escape the base inheritance of soul-lessness and mortality? The new doctrine

seemed to invalidate his most precious claim, that he was, tho fallen, yet of divine origin, and that the way had been opened for his redemption and return. He was like one who had been brought up as prince in a royal house, and now was found to be an unwitting impostor of the meanest birth, worthy to be exiled forever from the palace of his joys and hopes. What wonder that a storm of angry denunciation broke from the civilized world, and especially from those who felt themselves the heirs and guardians of the Great Hope, the religious believers? When we consider how deep and poignant was the effect of this horrid suspicion cast over Man's legitimacy, we need not wonder at Romanes' lament; still less, if we could see the case in its true perspective, should we wonder, or be angry or scornful, over the fact that hundreds of thousands of people today still feel only unbelief and indignation toward evolution.

This horror of blood-relationship with lower forms has been intensified in a very curious but inevitable way: our nearest kin, our cousins, as it were, are—*Monkeys!* This fact, which seems like one of the grim jokes of nature, is responsible for no one knows how much of the fury and scorn of anti-evolutionists always and everywhere. How strange a thing is the human mind—our logic, as we flatteringly call it! A comparative anatomist scrutinizing the make-up of gorilla or chimpanzee is completely convinced of man's kinship to the apes; but the ordinary citizen, with at least average intelligence and education, takes one look at the monkey cage in the zoo, and turns black in the face with rage at the villainous evolutionists who want to make out that he and the monkeys are "cousins." Of course it is exactly because the apes and monkeys are so shockingly like us that we resent it so! The monkey cage is almost an indecent sight for this very reason. Who can blame Mr. Jiggs for resenting the physiognomy of the orang-outang? Long before Darwin appeared the simians were abused and slandered thru the unconscious resentment of man over their plaguey likeness to him. Our very language bears evidence of this, for "ape" and "monkey" are nouns and verbs of contempt, yet the conduct which they represent is intensely and characteristically human.

That these cousins of ours, especially the great apes, are exactly the most nearly human of the lower animals is becoming increasingly clear thru the results of fair and unprejudiced scien-

tific investigation; consider for example, the refutation of Du Chaillu's libel on the gorilla by Akeley and others; and the showing of high mental powers in the chimpanzee by Köhler. Not only in the rudiments of intelligence but also in the realm of morals these creatures stand high if not highest among the animals.

The last of the three fears is by far the least in the minds or on the lips of the controversialists on either side, but it is likely to prove the most serious of all, most prolific in harm to our lives and destiny, and most intractible and obstinate to conquer: this is the threat against all forms of idealistic ethics involved in the concept of the universal and dominant *struggle for existence.* As is well known, Darwin started his systematic inquiry from this doctrine as a base of reference; his immense labors massed and exposed to view an infinity of facts of nature manifesting the working of the law. It seemed as tho science had come to testify in behalf of the maxim of selfishness—"Every individual and species for itself, and extermination take the hindmost!" The peculiar peril of this phase of Darwinism is that it accords and co-operates with powerful impulsions in our own nature, while the others are obnoxious to our sentiments and emotions: I have little doubt that ethics has far more to fear from "struggle for existence" than religion has to fear from all the rest of the evolutionary doctrine.

But no one can hold Darwin to any special responsibility for this doctrine; the struggle for existence had always been part, and often nearly the whole, of the experience of Man as well as the lower animals; Malthus had expounded the main facts before Darwin began his work, and so given Darwin his first clue. Besides, two great political systems based upon the struggle for existence were already in flourishing existence when Darwin was studying the problem: *laissez faire* in government and economics, and war in international relations. Still further the vast mass of men practice and have always practiced "struggle for existence" morals in certain broad areas of conduct, notably business and politics. So, ironically enough, this greatest danger has been the smallest fear.

Thus far, then, we have endeavored to set forth with the utmost brevity the three great fears engendered in the minds of men by the work of Darwin and his followers. These are not the fears of fundamentalists or anti-evolutionists alone, but, to a greater or lesser degree, of persons free from rigid or narrow views on any

subject, but still concerned for the future of the human race. Romanes, as we have seen, was profoundly and painfully seized with these fears, and saw no escape from them. Henry Drummond wrote his "Ascent of Man" to help those who, like himself, could not resist the proofs of the evolutionary theory, but still clung to the doctrines and practices of religion.[2] I cannot but feel that reflection upon the reality and prevalence of these fears might aid advocates of evolution to understand their opponents better and ultimately succeed better in converting them. In this sense this first part of my essay is addressed particularly to evolutionists, especially to those involved by choice or necessity in the defense of the doctrine.

We turn now to an examination of the fears themselves, to see whether the doctrines of evolution really justify them, and still more, whether evolution is really guilty of any treason against God, Man, or Righteousness.

First as to God. Natural selection, so far from eliminating a creator, demands infinitely more creation than the old notion of creation itself. Selection, of whatever sort, cannot even begin until some other power has made more than is needed. The ancient writing pictures God as making "the heavens and the earth" in six days, and "resting" after He had made them: Jesus on the contrary says that God is working "up to now,"—and we do not suppose that God stopped working at the time Jesus spoke. The doctrine of evolution spreads creation out over the vast ages of time and the boundless areas of space.

One more point for orientation, which I conceive to be of crucial importance: that is the question of what evolution really is: its *"to ontos on,"* in Aristotle's phrase. Words exercise a peculiar power over us, and the word evolution is no exception. I read but recently in a learned philosophical work, the writer of which is in full accord with the evolutionary theory, the statement that "as evolution is an unrolling, there must have been a rolling-up." I suspect that the great majority of people think of evolution as an *un*rolling or *un*folding. That is the precise etymological significance of the word, as it is likewise of the German equivalent. Now, what-

[2]Consider also the imposing work of Kropotkin, in his *Mutual Aid as a factor in Evolution*, and Sutherland in *The Origin and Growth of the Moral Instinct*, to counteract the mass of facts given in evidence on the side of struggle for existence.

ever evolution is, an unrolling is just exactly what it is *not*. I cannot too strongly stress this negative, in order to make room for the fullest and clearest impression of the positive. Take the evolution, or as we commonly call it, the development, of an individual organism. As development goes forward, membranes, tissues, organs, appear. They bud out, first in almost shapeless form, then gradually, imperceptibly, taking on the image of the adult structure. Now the development began in a single protoplasmic cell: just what is in that cell the biologist is investigating eagerly with great success; he finds marvellous structures in its tiny bulk: but never the structures of the future adult; never fins in the fish germ, nor wings in the bird germ, never legs, nor arms, nor eyes, nor brains in any germ. In the germ, all these organs *are not;* in the same identical individual when adult, these organs *are*. That is development, and it is emphatically not unfolding nor unrolling, nor, be it noted, "un" anything! For "un" is negative, and evolution is very positive.

The same logic holds exactly of the larger development, commonly called evolution, in the race. The eozoic slime had indeed the "promise and potency of all life," but what later in the ages emerged in plant and animal species,—leaves and branches and trunks,—limbs and sense-organs and nerve-systems,—these it had not: in the eozoic age they were not there; in due time they were there. That is evolution. Manifestly, then evolution is just exactly creation; and the vast moving picture of the universe which we call Science, is precisely the first genuine portrayal of what creation is. Thus evolution enormously expands creation: every blade of grass, every smallest insect or bird, even the micro-organism embodied in a single cell, still are the scene of creation. Bergson's "Creative Evolution" is of course the grand proclamation of this new truth.

Nor does the theory of evolution refute the idea of design or intelligence in nature, nor lessen the force of this idea in pointing to the existence of God; that argument, whether sound or not, is just as valid as it was before Darwin wrote; it has however infinitely more material to work with, for modern science, largely under the stimulus of Darwin's achievements, and by following out his method, has vastly expanded our knowledge of the amazing complexity of the world. Fortuitous concourse of atoms is

futile to explain even a single snow-crystal, to say nothing of the endless billions of crystals—or the perpetual succession of kaleidoscopic form of plant and animal life. For all these run thru endless cycles and series, always marshalled by law, yet always fertile in ever-new diversity. All this, the miracle *par excellence*, has been expanded and lighted up by the doctrine of evolution and the methods of evolutionist workers. As Walt Whitman says: "A single mouse is enough to stagger sextillions of infidels."

Genesis declares that God (or rather *Jahveh* or *Elohim*) created the world: but the ancient writer refrains from offering any slightest hint of how the world was made. Man, we are told, was made "from the dust of the earth"; true enough, as the dust of mausoleums witnesses; but how was man made? Shall we borrow the negro preacher's exposition, that God made several men of mud, set them up to dry in the sun, and left one out too long—hence the black race? I have no desire to be merely humorous, but rather to stress the fact that the doctrine of evolution gives us for the first time a picture of how God creates: the remarkable thing is that evolution represents God as consistent with himself, for it teaches that he made races and species from the beginning as he makes them now —never by sudden act or fiat, but always by growing them, by causing them to arise from infinitesimal origins, transform themselves by gradual stages, move in order toward the goal of their fore-ordained destiny. That is evolution.[3]

Next, what of Man? Is the doctrine that man is related to the "brutes" the "greatest menace to the church," as one of the most conspicuous leaders of the anti-evolutionists declared? Is Man forever disgraced, are his bright hopes of heaven either here on earth or in a distant future cancelled and lost if it should be admitted that he is akin to "the lower animals"? Did not God make them also, and beholding them did He not bless them and declare them good? How could Mr. Bryan and how can any believer in the Bible presume to such supercilious contempt for these humble but

[3]There is a more subtle, quasi-metaphysical aspect of this fear: that the evolutionary portrayal of the total history of the cosmos is not merely Godless, but *mindless*, except for the latest period, which is a mere moment compared with the illimitable reaches of pre-human existence. The most recent special form of evolutionary doctrine, *emergent* evolution, naturally intensifies this aspect. At this point I can only say that this yields to the same general treatment as the fear with regard to God—and leaves the problem in the same challenging posture.

still divinely created beings? Let them listen to another utterance from holy writ—"What God hath cleansed, call not thou common." I defy any man reading the Genesis story of creation to find the least shadow of ground for despising the lower animals, or indeed any item whatsoever of the created world. On the contrary the whole account of creation is remarkably continuous, with almost identical language, and of each successive level Jahveh says, "It is good." Away then with the notion that the Bible supports the view that a belief in man's blood relationship with the lower orders is a menace to the church or anything else.

But let us come down to the facts of life: has the anti-evolutionist then never been so happy as to own and love a dog, a horse? Has he never known, himself or by observation, the truly passionate love between a boy and a dog, with the dog usually playing the more "human" part? Has he never even heard the innumerable stories of the super-human fidelity of a dog, even a common cur, to his master? In brief does he know nothing of the moral virtues of the glibly-called "lower creatures"? If he missed the plain teachings of his own supreme authority, the Bible, has he also been blind to the abundant confirmation all about him of the divine hand in the making of the "beasts"?

Out of my file of ethical data I draw two items as evidence in the case, either of which can be multiplied indefinitely in common observation and current reading; the first is a case of a "brute," and as it happens one of the despised monkey family itself:

"The baboon possesses most admirable qualities....A deep, absorbing, and self-sacrificing love for any creature which is helpless and is dependent upon it in any way, is one of the baboon's most striking characteristics. This love on occasion prompts the despised chasma to deeds of unsurpassed heroism....That they will (in defence of their young) attack and destroy the leopard, the python, and even more dreaded man, armed with his mysterious firestick, is undoubted, and may be taken as a proof of noble and self-sacrificing courage."[4]

The other is a press dispatch, and deals with a member of the human species:

"Because his father, 77 years old, feeble, unable to work, and with no money, had not purchased and prepared his supper, H—— K——, aged 38, cleft the skull of the aged man with a shingling

[4] W. C. Scully. Atlantic Monthly, December, 1919.

hatchet. The bleeding body was left lying on the kitchen floor, while the murderer, his mother, and his three brothers, sat around and cursed because the old man had failed to prepare supper."

What of war as practiced by mankind in all ages, and, grievous to say, most of all as practiced by those human groups who pride themselves on the loftiness of their civilization? Is there anything in the whole range of animal conduct so shocking and so totally hostile to the Christian religion? What wonder that Dean Inge has called Man the "fiercest of all beasts of prey"?[5]

I have no desire to accuse my own species, nor to belittle the vast gulf which yawns between man and his humbler fellow-creatures; but who can resist the conviction that facts like these estop us from all supercilious contempt for the "brutes," and from any lofty indignation that we should be found to have blood relationship with them? The little child's touching and simple love for his animal pets is another example that sometimes the truth is hidden from the wise and prudent and revealed to babes. The fact is that the roots of all the cardinal virtues manifest themselves in the lower orders of creation as rudiments and foreshadowings of their fuller and richer fruition in Man; in the terms of religion we may well say that God planted them there. When we consider how extensive and definite is the anatomical correspondence between Man and his close mammalian neighbors in the animal kingdom, how his whole physiological life is almost identical with theirs, why should we wonder to find in them the clear beginnings of intelligence, of altruism, of love, of the social life, of marriage and the family? This great body of fact, pervading the whole area of biology, was almost meaningless to the older view of science, and is filled with significance under the new evolutionary conception. Again speaking in terms of religion, Man appears as the consummation and crowning glory of the Creator's work.[6]

Finally the ethical problem: Are competition, rivalry, antagonism, war, the basic principles of the universe? Are altruism and love and sociality mere wraiths and shadows, hovering above the battlefield, but powerless to ameliorate the carnage and destruction? This is the most ominous of the three great fears: but, as already

[5]The actual statement said "European man"; but strict logic would, I think, justify my phrasing.

[6]For a terrible indictment of Man as far below the other animals see Mark Twain's "The Mysterious Stranger," perhaps the most striking expression of profound conflict in the soul of the great humorist-philosopher.

said, evolution and the evolutionist have no special responsibility; it is almost an accident that the terrible facts which create this fear were linked so closely with the studies and discussions that underlie the doctrine of evolution. The facts are there in any case, and had long been apparent to acute observers and had long disturbed thoughtful minds. Not Darwin but Malthus dragged them into view, and Malthus was not an evolutionist.

The first thing to note on this phase of the subject is the existence of a great mass of fact refuting any supposed supremacy of the struggle for existence: Kropotkin and Sutherland have filled bulky volumes with the abundant evidence of the principle of mutual aid, of the struggle for others, of altruism, reaching far down in the animal scale. It was inevitable that Darwin should stress the individual and egoistic element in the struggle, as being the particular force leading to the origin of species. Furthermore struggle, war, battle, slaughter, are dramatic, startling, make a profound impression on our minds; while co-operation, peace, amicable living together, are undramatic, and just elapse without making any particular impression. But the broad study of evolution is just as much interested in co-operation as in rivalry, in love as in war, in altruism as in egoism.

Next it must be pointed out that an evolutionary view of life and of Man is full of hope; indeed it seems to hold out the only hope for ethics and the higher life. If Man really was created at some past time perfect, in the image of the Divine, and has degenerated to his present imperfect state, must we not look with dread to a further downward course in which we shall sink to ever-deeper sin and evil? But if Man had his origin in lower forms, simian, reptilian, aquatic, finally protozoan, and has now attained his present eminence over his fellow animals, what may not be hoped for in the long ages to come?

To be more specific: we have now a deficiency of many needed elements, of intelligence, of altruism, and social virtue; only in an evolving order can we hope to gain the needed increase of those qualities; but in an evolving order we are justified in expecting them; for the emergence of the new is the very essence of evolution. Whether or not we are evolving in the desired direction is indeed a fateful question, but it concerns all parties alike, evolutionist and anti-evolutionist; it is just the supreme question of life. Science

falls far short of furnishing any convincing answer: we solve it if at all by faith, and by works in accordance with our faith; to such faith the evolutionary view of the universe is the most powerful aid, if not indeed the sole support.

What then are the religious implications of Evolution?

First, the evolutionary picture of Man's Origin is the sole and only ground for Hope and Faith. If man was made perfect and has degenerated to his present state, we may as well despair. But Man has grown, or rather is growing out of the very beasts of the field, out of the slime of the earth, finally out of the stardust, perhaps out of impalpable electrons! From this angle his present situation is bright with promise.

Second, it is the evolution of spirit that is of supreme moment. All that has been done thus far is mere scaffolding, preliminary, not fundamental at all, but symbolic, suggestive, a "propaedeutic" to the real concept of creative evolution. A stellar universe, no matter how many light-years wide, nor how many eons long, without man—without Us—is after all "a tale told by an idiot, full of sound and fury, signifying nothing." Not much more meaningful is a Carboniferous or Reptilian age—with trees springing like weeds from a prolific swampy earth, and dinosaurs blundering about among them. The tiny mammals creeping timidly in the shadow of the plesiosaur now carry the meaning of the visible universe. But even these, grown to Mastodons and Megatheriums, are no answer to the "Riddle of the Cosmos." Only when Man appears does Meaning appear. "Man," says one biosophist, "is the rationale of the sea-anemone," and at the other end of the crescent line of thought is St. Chrysostom's profound saying, "The True Shekinah (the visible presence of God) is Man."

Third, an absentee God is now forever impossible. All the old separatist pictures are idolatrous, no matter how beloved the images they bear. Everything less than pantheism is from now on mere atheism. If God is not here and now, He is nowhere and never. The Samaritan said, "Here must God be worshipped"; the Jew, "No, here is the sacred spot." "God is a Spirit," said Jesus, "and must be worshipped in spirit and in truth." But spirit and truth have one clear dwelling place—in human hearts—and these are the cosmos, even if microcosmos.

Fourth, progress is the only ethics, and the only religion. "But

life has a meaning, after all," says Nietzsche, "that the Superman shall come to be." So again—from a strange coincidence—the man whom Nietzsche delighted to dishonor, Jesus: "I am come that men might have life, and have it more abundantly." For what is more abundant life if it is not the Superman? And how can life possibly become more abundant if it stays rooted in its tracks? The only way out is forward.

True, many ways beckon us forward; we do not know which to take. This is the hazard of life and the hazard of evolution. We are all peering into the dark uncertainty. This is the negative; what of the positive? The positive, the Everlasting Yea, of evolution, you have already read in its greatest prophet, the brilliant author of "Evolution Creatrice." "Plus the new"—that is evolution. So long as being remains what it is, folded or unfolded, it is not evolving, and there is no evolution. Only when that which *is not* becomes that which *is,* can we predicate evolution or development; only when the new and different supervenes on the old and same, in brief only when creation occurs. Let us make one change in Bergson's phrase and call it Evolutional Creation; for creation is the essence and evolution is only the form. This is almost the complete answer to all the supposed difficulties between evolution and religion.

Only in an evolving world could man find his place. A perfect world would afford no exercise for his best powers. Only in a world containing an admixture of what we call evil, can man's moral nature grow. For only as the way is open to do wrong, can the will act to do right. Somewhere in the flow of evolving being, on the front of the wave of development, there and there only, is freedom, and there humanity thrives, as the crown of life and the ever moving consummation of the process of evolutional creation.

Finally, what is practically a word of personal "confession and avoidance": I have used the standard religious terms freely throughout because this is the simplest and clearest way to deal with the question. But neither this use of words nor the argument at any point is intended to imply any dogma whatsoever. So far as the word *God* is concerned, I am not acquainted with any positive or specific definition of the term which can be recommended: it is rather, for the time being, a lost word. Jahveh, Zeus, Osiris, Buddha, and the rest of the historic "gods" are either obsolete or sym-

bolic. To hold that the values which have inhered in the concept of God can be conserved and reformulated is a great act of faith; and such faith, so far from being barred by the evolutionary concept, is now possible only by grace of that concept. So with righteousness: is Man moving toward a Kingdom of Heaven, a more noble and lovely life and order, or downward toward wreck and annihilation? Any stand, inward or overt, on this supreme question is likewise an act of faith; here too a positive faith is favored, not blocked, by the concept of evolution. I know no better summing up of these faiths than that of the greatest of our religious figures: "Ye shall know the truth, and the truth shall make you free."

HUYSMANS' CONVERSION

BY F. C. HANIGHEN

THERE is a controversy about Huysmans' conversion to the Catholic Church. It is rarely mentioned. It lies buried in old files of the Revue Hebdomadaire or precious ephemeral quarterlies. It seems to slumber. But let some rash critic refer to "that famous literary conversion" and it is wide awake. There are worse charges against Huysmans than literary impressionability. There are, in fact, attacks which impugn his spiritual sincerity. The Freudians, of course, have their say, and the novels, from "Mathe" to "The Oblate," furnish them with abundant ammunition. And cynics have mentioned his gastric disorders. But these assaults seem puny and ineffective against the impressive array of the defenders of the true conversion. Literary abbés. Academicians and litterateurs all affirm that this godless follower of Zola became a Catholic for the purest of reasons. In late years, the friends and admirers of Huysmans and his works have united in forming a Société Huysmans, obviously inspired by the example of the famous Stendhal Club. Lucien Descaves, of the Goncourt Academy, Huysmans' personal testator, is the president, and the list of charter members includes such illustrious names as Paul Valéry, Rachilde, Paul Bourget, and Léon Hennique.

It is important to state that Huysmans, in his will, expressly forbade the publication of his correspondence. M. Descaves is a veritable Cerberus in defense of this testament. Certain dealers in autographs have inserted in their catalogues whole letters of Huysmans in order to excite collectors. M. Descaves, in an address to the Société fulminates: "This is an intolerable abuse and, if necessary, we will obtain an injunction from the tribunals to eradicate it." M. Descaves was as good as his word in the case of De

Fresnois' book "A Stage in the Conversion of Huysmans," that contained some letters of Huysmans, and the volume was withdrawn from sale at the request of the testator. Gossip about this closely-guarded correspondence has aroused among a public ravaged by the Goncourt journal "cache-cache," similar suspicions and similar reactions. It is true that some of Huysmans' epistolary comments on sacred things and his religious interests are revealed as rather flippant in de Fresnois' book, and indeed the letters may contain a Huysmans quite different from the accepted legend. But it was well known that Huysmans was quite mercurial in his conversation and in his personal letters about people and things which he treats reverently in his books. He consecrates some of his most beautiful pages to St. Theresa, but he cannot resist dubbing her "a metallic lily," and St. John of the Cross, another idol, becomes merely "a red-hot iron." It was quite true, as has been said, that he was a cat that liked to try its claws on current reputations and friends. Thus it is not surprising that the correspondence, so mysteriously withheld, should be regarded by many as mollifying in no important respect those statements, first of allegiance, and then of faith, which in "Against the Grain," "Down There" and finally "En Route," form such an impressive stairway to the foot of the Cross.

If M. Descaves is the legal protector of his shade, so is the Abbé Mugnier his spiritual guardian. It was he who said mass in his memory at St. Sévérin's on the twentieth anniversary of his death and who recited the "De Profundis" over his grave. His participation was most fitting, for it was to him that "Joris-Karl" Huysmans, baptized Charles-Marie-Georges as an infant, first turned when he felt the stirring of faith and said, with his usual acerbity, "I wish to clean my soul. Have you some lye?" The Abbé can pride himself on this, his most signal conversion, among the many which he is said to have worked in the social and intellectual world of Paris. A frequenter of the salons, he is also a great diner-out and says that he expects to have a napkin as his shroud. He was once intrepid enough to make an assault on the great unfaith of Anatole France. It was at a time when M. France was mourning the death of Madame de Caillevet, his Egeria. "God is good," the Abbé told him, "and he will surely unite two such noble souls in heaven." "But my good Abbé," M. Bergeret is

said to have replied, "Will Madame and I be able to take our morning coffee together there?" And as the priest remained quite nonplused by such a question, the creator of "Thais" continued, "You should know, M. l'Abbé, that for me the morning coffee with the loved one is the best moment of l'amour." And the good Abbé had no reply.

A less pious, perhaps, but more clairvoyant admirer of Huysmans is M. Léon Deffoux. M. Deffoux is an authority on the naturalist movement and has filled his excellent little book, "Le Groupe de Médan," with a mass of fascinating information about Zola, Maupassant, Céard, Hennique, Alexis and Huysmans. The chapter on the latter is entitled, "J. K. Huysmans, Literary Convert." Needless to say, he assigns no anthropomorphic causes and paints a picture of Huysmans languishing in the arid stretches of Naturalism, long overworked by Zola's followers, and yearning for the fresh uncultivated fields of religion. He traces with considerable humor the stages in the conversion, and observes that "he approached penitence with the arguments and delays of a sick person who tries to run away from treatment and who hesitates before the salutary bath which he affects to find either too hot or too cold." M. Deffoux maintains a discreet reserve about the correspondence, confessedly with a wary eye to M. Descaves and his menacing tribunals, but suggests that the publication of the letters would destroy the Huysmans of legend.

The threat of the assizes did not silence Deffoux on the "vie amoureuse" of Huysmans. It has been customary to regard the sponsor of Durtal as a cold, fatigued sensualist who, to quote his words in "Down There," took "his disgusting herd of desires to the brothel-abattoirs to be knocked in the head by the butcher-girls of love" and who experienced no sentimental feelings in his contacts with women. M. Deffoux discloses a beautiful, but tragic idyll in this celebate's career. In his student days in the Latin Quarter Huysmans met a girl named Anna Meunier who became his mistress and from whom he was separated by the Franco-Prussian war. He found her again fifteen years later and revived his early Mimi-Rudolphe liason. She had two little daughters, who used to call their mother's lover "Papa Georges," which does not mean, however, that he was really their father. This appellation should bring a smile from those who recall his vituperation of women

and the domestic state. She is the heroine of "En Route" and Huysmans actually spent a vacation with her and one of her children in that macabre chateau, that dominates like a House of Usher that strange, hallucinative book. The malady of the heroine was insanity, and Anna died of it about ten years later, about the time of "En Route", it is significant to note. That he loved her profoundly is certain, and he undoubtedly wanted to marry her and establish a real domestic refuge against the horrors of a bachelor's lonely struggle with bad restaurants and slovenly servants, a struggle which he described so vividly in "En Ménage" and "Down There."

As Anna Meunier became more and more afflicted with this mental malady and finally had to be confined in the St. Anne Asylum, the agony and disappointment of this affair, one may suggest, provided a reaction in Huysmans which was quite characteristic, a reflex which took the form of an irritable animosity to all that was feminine or domestic. Certainly this throws a fresh light on Huysmans, and one can assemble under another heading clues to his conversion. One remembers that "The Carnal Struggle" was the first tentative title of "En Route" and M. Deffoux quite properly asks "if [after Anna Meunier's death] Huysmans had not lost the terrestrial inspiration of a part of his writing, the helpmate of his life, the little Notre-Dame d'Amour, to whom instead of our Mother Mary he first addressed his devotions." He wonders "if Huysmans' cult of the Blessed Virgin was not determined mainly by the sensual perfume of his love-memories which flowered into purity through the medium of prayer."

Thus M. Deffoux. To him reposts M. Léon Hennique who strenuously dissents from all these non-confessional surmises. "No, his faith was completely free from such memories; Huysmans remained wholly master of himself before and after the conversion. Once a Catholic, he had nothing but horror for his former self, for the young boaster of vices which the friends of his youth had known. He was conducted to Catholicism blindly, almost by hand, through the shivers, the frights, the astonishments of the supernatural."

The supernatural! It is a strange sight—that of Huysmans, so long an apostle of Naturalism, credulously participating in séances of Spiritualists and table-tippers. This neurasthenic, who was wont

to attribute his changes in health to the weather and changes in weather to supernatural influences, was undoubtedly ready and receptive for the fantastic doctrines of the occultists. To obtain the material for "Down There," he made friends and lived for a time with an ex-abbé, Boullan, who was in continual combat with the Satanists. The ex-abbé asserted that these people were endeavouring to cast spells on him from their centers in Paris and Bruges, and he performed for Huysmans' benefit elaborate exorcisms to repel their maledictions. Did Huysmans at the time recognize Boullan for the half-demented rogue that he was? There is no evidence about this except a letter which M. de Fresnois exhumed, poking fun at some of Boullan's ceremonies. But there was something more than the "there-is-something-to-this-sort-of-thing" attitude. Huysmans utilized some of Boullan's consecrated wafers and participated in the absurd alarums and excursions against the Rosicrucians. Without these wafers, he professed to feel himself unprotected against the ill-will of the ex-abbé's enemies. Table-tipping is one thing, but what must one think of the extraordinary credulity of a man who believes that he felt blows from a phantom fist, directed, he felt sure, by those enemies? He paid Boullan's fine when the latter was arrested for practicing healing. Is it possible that he found something akin to his own strange coprolalia in a man who employed human ordure to cure the maladies of the soul? He defended him while he was living and paid for his tomb when the latter died. But after he had examined the papers of the deceased he altered his views. Only to a few friends did he confide much later that the late abbé was in fact a Satanist. Mindful of these facts, one has little difficulty in understanding the completeness of his conversion.

That it was not a conversion at all, but simply a return to the faith, was the view of James Huneker, who introduced Huysmans to American readers. He was captivated by his paradox that Huysmans had always been a Catholic at heart and that the official genuflexion was not surprising. The works from "Drageoir aux Épices" to "The Oblate" abound in references, images and tendencies of thought which could be adduced to support this contention. But it is difficult to estimate how much atmosphere had to do with this. Huysmans lived most of his life in a former Prémontré convent, converted into an apartment house. In France, the Catho-

lic spirit and trappings had invaded not only the everyday life but the forms of thought to such an extent that a French writer could rarely form a metaphor without alluding in some way to something connected with the church. Perhaps, to draw a finer distinction than Huneker, it would be more accurate to say that Huysmans was never an atheist. He was never, even in his apostolate under Zola, an anti-clerical, never attacked the Church. Nor was he a probing agnostic. He never took the trouble to fabricate an abstract philosophy of his own and he avoided discussion and the free play of general ideas. He took from Schopenhauer only his general pessimistic attitude and apparently was not a deep student of his epistemology. He averted his gaze from the discoveries and hypotheses of modern anthropology and science, and mentally associated all such ideas with the repellent materialism of modern France. His early prejudices against the Church were superficial, his aversion to the ideology of the Third Republic was profound, and so it was not surprising that such a keen polemist should be on the side of the angels.

Huneker was also responsible for the erroneous statement that Huysmans renounced, in his latter days of piety, the immoral literary progeny of his youth. The courtezan, Marthe, the loose Vatard girl, and Des Esseintes were all candidly recognized by the Oblate of 1904. In an interview with the editor of "Gil Blas" in that year, he proclaimed that he would never consent to destroy these works, assailed the narrow clerical attitude towards Art, that urged this step, and contrasted it with the broad Catholicism of mediaeval days. He urged, rather than affirmed, with a defiant attitude toward the Abbé Belleville and other clerical critics and an uneasy glance at the Vatican, that all his works represented the successive steps in his conversion and so were necessary to the understanding of his own particular way to Damascus. He was doubtless sincere in stating this attitude. But even to the last he cherished an affection for "En Ménage," that repellent examination of a single man's sexual life, an attitude which seems rather the fondness of a literary parent toward his favorite child than any interest in the stages of his spiritual evolution.

Huysmans was no academic advocate of the Catholicism of mediaeval times. He saw in it the perfect flowering of art. But he also saw in it the Devil and he brandished Satan to flagellate the

perpetrators of the modern sins against art. In his later work he would maintain that a hideous modern sanctuary was the work of Lucifer and that a piece of restoration on an old church was instigated by the Evil One. He was thus doubtless more Catholic than his fellow communicants, but he was perhaps less of a Christian. Guiches and Coquiot, close personal friends and intimates, are both constrained to point out instances of his uncharitable tendencies in personal contacts. I take little stock in theories that are based on his early researches in the slums of Paris, in "Croquis Parisiens," for instance. The meager evidences of humanitarian sentiments found therein are most probably lip-service to the creed of his master Zola. His faithfulness to Villiers de l'Isle Adam was due to loyalty for an old comrade-in-arms in the battles of Symbolism rather than to any deep feeling of compassion. Did not the Abbé Mugnier say that he had made Huysmans a Catholic, but that he could never make him a Christian?

But whether or not he observed all the teachings of the Sermon on the Mount cannot affect the contestable fact that his was a sincere conversion. It certainly bore no resemblance to the buffoonish conversions which are nowadays the latest affectation of futuristic poets. That literary cupidity led him into sacred groves is undeniable. But once there, other factors became more important. His talk was a mélange of violent prejudices, atrabilious sentiments, corrosive detractions and graphic phrases, and never did he make an attempt to arrange these ideas into some intelligent system of thought. Was his allegiance to Catholicism the response to a more humane ideal, which even the most abandoned of decadents must experience? In any case, there are few things more curious than the rebound of this apostle of disintegration into the classical shelter of the Church. Much given to neurasthenic states and melancholia, he indulged himself in petty superstitions at first, then progressed to spiritualism and an amazing credulity in Satanism, all of which is co-extensive with elementary religious beliefs. He found nothing to love in life, and in love, nothing but an unfortunate trauma which sent him groping for a stable, imperishable affection. Add to that his passion for external form, his visual appetite, his legitimate disgust for tawdry modernism, and it is easy to see how he found more to worship in the great fanes of Paris than ogival beauty and the mediaevalism of plain-

chant. One should not forget that even so individual a person as Huysmans was a unit in a society which was moving towards the great Dreyfus struggle; nor that he was the companion of Barbey d' Aurevilly, Léon Cladel, Léon Bloy, Villiers de l'Isle Adam, Paul Bourget; that he was not a lone voice crying in a bourgeois wilderness, but a single member of a whole school of protest against materialism.

To sum up all these factors makes for a satisfactory explanation—that explanation, or M. Deffoux', or, I am tempted to say, almost any other. For as William James has pointed out, science and religion are agreed that beyond a certain point there are forces outside the consciousness of the individual which bring redemption. If you choose, you may explain it, beyond that point, by "unconscious cerebration," the "subliminal mind," or other scientific terms. Or perhaps that unknown field appertains to religion rather than to psychological and literary autopsy. However that may be, do not be deceived. M. Descaves may continue to reign triumphant over an enigmatic correspondence, even M. Deffoux may recant, and it does seem to slumber. But there is a controversy and there will always be one as long as there are the two forces of science and religion.

THE EARLY LEGALIST SCHOOL OF CHINESE POLITICAL THOUGHT

BY LEONARD TOMKINSON

THE OBJECTIVE STANDARD AND THE LAW WHICH ALTERETH NOT

THE general argument so far has given little indication why this group of writings should be styled "Legalist," though this may have been suggested by some of the quotations given. In the quotation given from the "T'ien Sha P'ien" regarding Shen Tao it will be noted that one of the distinctive qualities of the Way of the Universe as a guide for human action is its impartiality—the absence of any assertion of personal predilection or partiality. It was in fact the doctrine of non-assertion that led the Legalists to formulate the necessity of an objective standard. For many matters must present themselves for a ruler's decision and if he is not to assert his own preferences or opinions he must have some means of deciding outside himself not subject to human limitations. It is for a similar reason, Shen Tao points out, that lots are used. But to decide both routine and important matters of state by the chance of the lots could hardly be recommended as a serious policy, and thus was deduced the necessity of an objective standard in the shape of a fixed law. This is clearly seen from the views which L. Wieger attributes to Teng Se, whom he calls the first legalist: "The 'tao' does not consult beings; the prince should treat his people as Heaven treats everyone—in a general, not a particular way. Above all he should not try to be kind to them, but merely to apply the law rigorously to them without respect of persons.... This is the principle unifying a principality. To rule is not to act but to let the law apply itself without intervention."

In much the same way Heo Kuan Tse says, "The efficacity of Heaven is like the pole of emanation of the virtue of 'tao', which

is 'fah'; what conforms thereto is good, what does not is evil. Heaven is a being who gives by virtue of the 'tao' their nature to all beings. The role of the sage is not to make the law but to seize it in the 'tao,' in the action of Heaven, and then to apply it without alteration. The sage each moment must make an effort to seize the decree of Heaven for that moment. The rule for politics is impartiality."

Some writers of the period treated this subject of impartiality in a broad manner, both general and generous. This is especially true of Sze Chiao who was perhaps more of a Confucianist, at least in theory, as the following passages will show: "A public mind is essential. He who looks from the bottom of a well can see only a few stars, but he who looks from a mountain top can see from horizon to horizon; it is not that the latter is more clear-sighted, it is that the standpoint is altered. The private mind is like the position within the well, the public mind is like the position on the mountain top. Wherefore if knowledge is bound by individualism little will be known, while starting from a public standpoint much may be known."

Let us take another passage, this time one quoted by L. Wieger. "One must not do to others what one likes not oneself, one must correct in oneself what one dislikes in others. No jealousy! No envy! If another profits it is as if I profit. One must rejoice in the recognition of other men as in one's own recognition, and be sorry for their faults as if one had committed them oneself. As one would suppress those who make disorder in the state so one should stifle in one's own mind thoughts and sentiments which make for moral disorder."

"Yet," adds Wieger, "he was a legalist and we can see how Wei Yang whose adviser he was, applied his ideas without any sugar coating." Perhaps this is a little unfair. But a certain affinity with the quotations from Teng Se and Heo Kuan Tse will be seen in his recommendation to "let the names rectify themselves and let the activities take their own course, but let approbation and punishment be attached to the names. Then no people will be irreverent to you." Again the idea behind his saying, "Check the names by the substances, and all will be well," is that conception of an objective standard which, as we have noted, led to the belief in the necessity of a fixed law.

The first passage from Sze Tse quoted above will recall Han Fei's pronouncement: "Those who in ancient times ruled the people followed the public law and dispensed with private policy."

That the law was regarded by some writers in the first instance as merely one form of fixed standard is shown by several quotations from Yin Wen Tse in Hu Shih's "The Development of Logic in Ancient China." "Mankind," says Yin Wen Tse, "has sought to determine length, quantity, weight and tone by means of rulers, bushels, balances and tonal regulators, respectively. It tests reality and unreality by means of names and determines order and disorder by means of law....Therefore the multifarious activities are comprehended in the one, and all standards are standardised by the law....It is by this means that the stupid and defective may be governed as well as the clever and intelligent." Indeed the word "fah" now usually translated "law" (but in common speech often signifying method or plan) originally applied to measures. Yin Wen Tse gives four meanings of "fah":—"(1) the permanent forms, such as the relations between ruler and subjects, between a superior and a subordinate; (2) the conventional forms, such as capability and incompetency, wisdom and ignorance, similarity and difference; (3) the forms (laws) for the ordering of the people, such as rewards and punishments, honours and penalties; and (4) the standards of measurement, such as the measures of area, weight and volume." Professor Hu also quotes aptly in this connection the definition of "fah" in the "Kuan Tse" as "that by means of which activities are promoted and aggressions prohibited."

Another interesting word in this connection is "hsing." This is the word now commonly used for punishment, but its original meaning seems to be a mould and so a pattern, the connection of which with the idea of a fixed standard is obvious. Furthermore in ancient books it was used for the administration of justice, and, in effect, for law. This reminds us that the law was regarded principally as the method or standard according to which rewards should be bestowed and punishments inflicted. This is certainly the standpoint from which most of the Legalists discuss it.

This point of view is perhaps most clearly expressed in Han Fei's chapter, "On Standards" (Yu Tu): "Now if men are advanced on the basis of merely reputed ability, then ministers will become estranged from the rulers and will form parties. Then if

officials are appointed for party reasons, the people will give their attention to making personal connections and will not seek to put the law into practice. Thus there will be a want of ability in office and so the country will be brought to disorder. When rewards are given according to reputation and punishments are based on slander, then those who delight in rewards and fear punishments will neglect public affairs and carry out their private schemes and men will form parties to promote each other's interests....and thus when there are flagrant faults they will be covered up; and so loyal ministers will be in danger of undeserved death and wicked ministers will enjoy undeserved security and profit....Such a state of affairs is the root of destruction...A minister who shows mercy and bestows benefits, who cares for the people for the sake of his reputation is not benevolent....The law takes no account of rank even as the carpenter's line does not follow curves. What the law decides the learned cannot explain away, nor dare the bold dispute it. The punishment of wrong cannot be escaped. When the high officials are distributing rewards the common man is not excepted....As a state respects the law, it is strong; as it fails to do so, it is weak....The wise ruler selects men by law and measures their merit by law."

The same view of law is found in the quotation from Shang Yang's discourse on the evolution of society quoted in a previous chapter: "When the land became extensive and the people numerous, then appeared irregularities and conspiracies, wherefore laws were established that standards might be fixed. Thus came about the idea of sovereign and minister, the distinctions between the various departmental officials and the limitations fixed by law."

Of course the idea of impartiality in the distribution of rewards and punishments was not peculiar to the Legalists, and it must be admitted that some passages on this subject in the "Kuan Tse" might have been written by a good Confucianist. Let us take two examples: "The former kings put great stress on glory and shame, and made them depend upon deeds. Throughout the empire there was no personal favouritism nor private spite. The good prospered, those who did evil suffered. As their rewards were clearly just they did not cause scandal, and as their punishments were clearly just they did not appear cruel." ("External Teachings").

"When one cannot establish right teaching and do away with

wrong, when one cannot recompense the deserving, nor punish crimes, if at the same time one thinks of governing the people, one thinks of doing what has never been possible."

Such views are really very like those expressed in Tong Chong Hsu's chapter "On Investigating Merit and Reputation." But the true Confucian judgment on this matter is expressed in the "Analects": "The master said, 'If the people be led by laws, and uniformity be given them by punishments, they will try to avoid the punishment but have no shame. If they be led by virtue, and uniformity be given them by rules of propriety (or a spirit of reverence), they will have a sense of shame, and moreover will become good." (Legge)

The "Prince of Shang" was certainly no Confucianist. According to that statesman Government depends on three things:—(1) Law, the common implement of sovereign and minister, (2) Reliability, which must exist between sovereign and minister, (3) Authority, by which the sovereign alone rules. Of these the greatest is law for it is fundamental; the others are significant only in relation to it. L. Wieger thus sums up the views of Wei Yang: "The most just and humane cannot make others so, therefore the duty of the sage-prince is only to make them keep the laws; any officer who transgresses the law or allows it to be transgressed must be put to death with his family. The law binds all the people of the state together. The law is the refrigerator that brings about solidarity."

That Shen Tao also held to the supremacy of the law may be shown by the following quotation: "The wise do not go outside the law and readily make their own schemes, scholars should not turn their backs on the law, seeking to make a name, nor should the minister turn his back on the law to gain fame....One's family may be punished, one's relatives perish, but the law must never fail."

An incident recorded by Han Fei Tse indicates that Shen Pu Hai shared the views of other Legalists in this respect: Chao the ruler of Han said, "It is not easy to put Law into practice." Shen replied, "Legalists see merit and grant rank; on the basis of ability they make their official appointments. You, after making laws, listen to those about you and consequently it is difficult to put them

into practice." The prince replied, "Now I know how to cause my laws to be carried out."

But in theory at least it was Han Fei Tse himself who carried furthest this doctrine of the absolute supremacy of Law. His reasons for this are set forth in his chapter on "Criticising Authority" ("Nan Shi"): "Yao and Shun, Chieh and Cheo are produced only once in a thousand generations; those better than the average are not equal to Yao and Shun, and those worse, not so bad as Chieh and Cheo; so to embrace Law means order, to turn the back on Law, disorder. To turn the back on Law and await a Yao or Shun to restore order would mean a thousand generations of disorder and one of order. To embrace Law and await a Chieh or Cheo to cause confusion would be to have a thousand generations of order and one of disorder." Liang Ch'i Ch'ao comments on this passage that "it is in fundamental opposition to the doctrine of the rule of the most able, which implies 'when men thrive, government prospers; when men decline, government ceases.' It holds that long continued good government cannot on this basis be hoped for." Liang in this connection quotes Hsuin Tse's criticism: "Yi's method was not futile, yet Yi did not always hit the target; Yu's 'fah' seemed sound, yet the Hsia Dynasty did not last for ever. When the method ('fah') finds the right man (to use it) there is success, when it misses the right man there is failure....not to be able to adapt to circumstances is sufficient to bring to confusion."

That Han Fei, however, was prepared to maintain his theories in the face of all the Confucianists is clear from the following passage in his chapter entitled "Five Kinds of Maggots": "The Literati by their learning confuse the law, the knightly by their deeds of daring transgress the prohibitions, but the rulers treat both with respect and thus bring about disorder. To depart from the legal is criminal and yet so do all the literati by means of their learning. To oppose the prohibitions is punishable with death and yet the knights defend each other in their private exploits. Thus to those whom the law condemns the princes show favour. Those whom the magistrates would punish the higher authorities cherish ....With such practices ten Huang Ti's could not maintain order

....Learning is of no use; if use is made of it disorder results. In the state of Ch'u there was a man of stiff uprightness. His father stole a sheep so he reported the matter to the courts. The magistrate sentenced him to death, for though his action was right in relation to his prince it was wrong in relation to his father. He was found guilty because he had reported a crime. According to this way of looking at things, a loyal subject is a bad son....A man of Lu who led his prince's armies in three cases fled from the battle. When Chong Ni inquired of him the cause he replied, 'I have an old father; if I died he would have no one to look after him." Chong Ni regarded filial piety as a ground of promotion and so promoted him. Looking at things from this standpoint, it follows that a filial son is a disloyal subject. As a result of the magistrate's action mentioned above, the men of Ch'u would conceal crimes, and as a result of the reward of Chong Ni, it became easy to subject the people of Lu. Thus what is profitable to ruler and to subject lie in opposite directions. It is vain to seek at the same time the establishment of the character of the common man and the prosperity of the state."

Han Fei never doubted that the more important was the prosperity of the state and this tended to be bound up with a mechanical application of a fixed standard and rule regarding rewards and punishments. The unqualified approval he shows for the attitude of King Chao Hsiang of Ch'in in the following story reveals the extent to which he was willing to carry this view: When a great famine raged in Ch'in, Marquis Ying observing that in the royal park vegetation had flourished suggested that the vegetables, nuts and dates there if distributed to the people would save their lives and so asked that the park and its products be thrown open to the sufferers. But King Chao Hsiang replied, "Rewards are given only to those who have earned them by their merit; if I now do as you suggest and throw open the park to all, irrespective of merit or lack thereof, such giving of rewards irrespective of merit is the way of disorder. If I were to throw the park open to all, then those with merit and those without would struggle for the products and confusion would arise. Better were it to let them die and to maintain order."

No doubt there was something to be said for a fixed objective standard in the state of affairs prevailing in China in the years

immediately preceding the establishment of the Ch'in Dynasty, and there is some truth in Liang Ch'i Ch'ao's comment on the passage quoted from the chapter on "Criticising Personal Authority," that it contains the germ of a theory of Constitutional Government. Hsuin Tse's criticism, "Not to be able to adapt to circumstances is sufficient to bring to confusion" has a certain cogency, but is not wholly apt as applied to the writings attributed to Han Fei as a whole. For it is set forth in one passage that "A wise man never expects to follow the ways of the ancients, nor does he set up any principle for all time. He studies the conditions of his time and then devises remedies therefor. There is no constant method for the government of men," the passage continues, "that which works is the law, when laws are adjusted to the time, there is good government."

However, Sze-ma Ch'ien's comment must be regarded on the whole as just and as applicable to other Legalists besides Han Fei: "He carried to excess the idea of measuring things to distinguish between right and wrong."

PENALTIES AND A PESSIMISTIC ESTATE OF HUMAN NATURE

We have seen that the Legalists regarded law mainly in terms of rewards and punishments. We have also noted the view of Yin Wen Tse that force should only be regarded as a last resort: "When the 'tao' is not sufficient then law must be used, when the law is not effective policy must be used and when authority fails force must be used; but when force has been used there must be a return to authority, etc." But this merely serves to show that Yin Wen Tse was not a true Legalist but rather a "Logician," one of those chiefly concerned with showing the importance of an agreement between "the name and the substance"; furthermore as we learn from the "T'ien Sha P'ien" he had fallen under the influence of Meh Tse.

Even the "Kuan Tse," though on the whole its views are more humane than those expressed in other Legalist works says, "When men hate each other they become violent and therefore laws are made," implying that punishments held, chronologically at least, the first place in legal matters. But the typically Legalist view is expressed quite simply in the chapter on "Rewards and Punishments" in the fragment attributed to Shang Yang where it is maintained that in a prosperous country punishments to rewards are in the pro-

portion of nine to one; in a strong country seven to three, and in a country that loses territory five to five. "The best way," he says, "to put an end to crime is severe punishment....When punishments are severe and certain, the people will not venture 'to try it on,' so there will be no punishments."

In quite the same vein Han Fei observes, "When punishments exceed rewards the people are peaceful, when rewards exceed then disorders arise. Wherefore in the governing of the people the excess of punishments over rewards is the source of good government, and the excess of rewards is the root of confusion."

Such conclusions came from the very pessimistic view of human nature held by all the Legalists. They did not discuss the nature of man as a specific question of philosophy after the manner of Mencius, Hsuin Tse, Tong Chong Hsu and many others more or less well known, but their views may be easily inferred. Thus Wei Yang says, "It is well said that all men are brothers, real brothers, but it is only the law reinforced by severe penalties that can make them treat each other in a brotherly way." Han Fei is very anxious to make clear that his insistance on punishments is entirely in the interests of the people, and merely because they are incapable of understanding more humane treatment. Thus he says, "The sages seek the good of the people, wherefore when they inflict punishment it is not because they hate the people, but because they love them in a fundamental manner." He illustrates this in his chapter entitled "The Five Kinds of Maggots": "Now here is a worthless son. His father's and mother's displeasure does not cause him to repent; the reproval of the country elders does not move him; his teachers' instructions do not alter him: the love of parents, the example of the village elders, the wisdom of his teachers,—all fail to affect him in the least. Then the country magistrate sends the military police to round up the disorderly characters and the fear causes him to change his behaviour and alter his practices. Wherefore when the love of parents proves insufficient for the education of sons recourse must be had to the severe punishments of the local authorities; for the people are arrogant under love, but obedient under fear."

Similarly in another passage he says, "In these days Confucianists and Mehists alike maintain that the former kings loved the whole empire and regarded the people as parents regard their

children. This, they say, is to be seen from the fact that in the administration of justice they found no pleasure in the infliction of punishments, but when they were necessary, wept. They imply that if rulers regarded their peoples as parents their children good government would result. This idea if carried to its logical conclusion

would imply there was never anything wrong in the relations of fathers to their sons....Now there is no greater affection than the love of parents for their children yet the result is not always order."

He also enforces his views of the comparative futility of proclaiming love and righteousness by a comparison of the results of the efforts of Confucius and of Duke Ai of Lu as we shall see in the next chapter.

But the cynicism of the Legalists is sometimes shown in passages not dealing exclusively with punishments. A selection of such may be taken from the writings attributed to Wei Yang: "When a country has rites, music and poetry books, goodness, culture, filialness, brotherliness, honesty and power of discrimination, then rulers cannot send the people to battle and the country will be destroyed....When the good rule the violent, disorder and loss of territory will result; when the violent rule the good, there will be order and national strength." (Seeking Strength). "When the people are weak the state is strong, if the state is strong the people are weak....When the people are simple there will be strength and when there is luxury there will be weakness....When the people are stronger than the government the state is weak, when the government is stronger than the people the state is strong."

Again in the Kuan Tse we find it stated that "Love is the beginning of hate, virtue the root of envy. When the family is wealthy then behaviour declines"—but this is not Shang Yang so the qualification is added, "except in the case of the most excellent."

Shen Tao is not less cynical because he bases his argument on the "tao": "The ancient kings never appointed a man to office who would not accept the stipend belonging to it, and they never gave a stipend which was not ample—if the appointee were not to gain something for himself out of the office the ruler would not make an appointment (i.e. the emperors made sure that the interests of their officials should be identified with that of the sovereign.)....

All men have a mind to seek their own interests; to make use of this fact in employing them is to follow the 'tao.' We have noted in a previous chapter the comment of the "T'ien Sha P'ien" concerning Shen Tao that he "laughed at those who valued ability and virtue." The futility of such things he illustrates by observing that if "Yao had been under Li Shu the people would not have listened to him," that it was merely because the sage ocupied the throne that "what he commanded was carried out, what he forbade ceased." But of this, too, we shall have more to say in the next chapter.

Fortunately the views of these Legalists on these matters do not seem to have been very influential. Chu-ko Liang, though a professed admirer of the "Fah Chia," expressed a more humane view when he says, "Make things manifest by law and when the law is functioning then know mercy."

THE PREHISTORY OF AVIATION

BY BERTHOLD LAUFER

THE desire to fly is as old as mankind; in all ages man's imagination has been stirred by the sight of flying birds and seized by the ambition to sail upon the wind like one of them. There is a long record of ventures, experiments and failures, and the romance of flying still remains one of the most fascinating in the history of mankind.

It is to man's ingrained love for the fabulous, for the wondrous and extraordinary, to which we are indebted for the preservation of ancient records of flight. The prehistory of mechanical science is shrouded in mystery because primitive man was unable to render an intelligent account of it. Just as natural phenomena were regarded by him as wonders wrought by supernatural agencies, so any mechanical devices were interpreted as witchcraft. Every investigator and skilled artificer of prehistoric and early historic days has gone down in history as an enchanter or wizard who had made a pact with demoniacal powers. Many of the so-called magicians were simply clever mechanics whose work was beyond the comprehension of their contemporaries and whose achievements were so singular and awe-inspiring that they were believed to have been inspired by supernatural forces. This is the reason that those who made attempts at aerial flights were so often associated with magic and necromantic art and why in our middle ages solely witches and devils were endowed with the faculty of flying.

Ancient traditions regarding mechanical wonders must, therefore, be divested of their legendary garb and exposed in their historical nucleus, but we owe to them the preservation of many re-

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cords, for the dry and bare bones of historical events are apt to be relegated to the waste basket.

The imaginative faculty of the human mind does not conceive things that have no reality in existence. The product of our imagination is always elicited by something that we have at least reason to believe exists. The question is: if these myths exist, how did they arise, and what germ of fact lies behind them.

In the same manner that astrology was the precursor of astronomy and alchemy evolved into the science of chemistry, so there is an abundance of lore which godfathers the history of aviation. To distinguish that primeval stage from the present accomplished fact we will simply speak of it as the prehistory of aviation and we will show that our modern progress is not due solely to the efforts of the present generation.

The Romance of Flying in China

At the threshold of the earliest recorded history of China an imperial flyer[1] appears, the emperor Shun who lived in the third millennium before our era; and he is not only the first flyer recorded in history but also the very first who made a successful descent in a parachute.

Shun's early life teemed with thrilling adventures. His mother died when he was quite young, and his father, Ku Sou, took a second wife by whom he had a son. He grew very fond of this son and gradually conceived a dislike for Shun which resulted in several conspiracies against the poor youngster's life. In spite of this, however, Shun continued in exemplary conduct towards his father and step-mother. His filial piety attracted the attention of the wise and worthy emperor, Yao. Yao had two daughters who instructed Shun in the art of flying like a bird. In the commentary to the annals of the Bamboo Books, Shun is described as a flyer. Se-ma Ts'ien has preserved the following tradition. "Ku Sou bade his son, Shun, build a granary and ascend it, and thereupon set the structure on fire. Shun who stood on top of the tower, spread out two large reed hats which he used as a parachute in making his descent and landed on the ground unscathed." Considering the fact that Chinese reed hats are umbrella-shaped, circular

[1]Bladud, the legendary tenth king of Britain, is said to have made wings of feathers by means of which he attempted an aerial flight which resulted in his death in 852 B. C.

and very large (two to three feet in diameter) this feat would not seem impossible.[2] Shun later married the two sisters, and their father gave him a share in the government.

Winged flight, however, seldom appears as a real attempt. The emperor Shun is practically the sole example and seems to have found few imitators.

Chinese writers fable about a country of flying folk, Yü Min, located on an island in the southeastern ocean, a people with long jaws, bird-beaks, red eyes and white heads, covered with hair and feathers resembling human beings, but born from eggs.

The conception of bird-men is quite familiar to Chinese mythology and is often represented in Chinese art. Lei Kung, the god of thunder and lightning, has wings attached to his shoulders (usually those of a bat) by means of which he flies to wherever he wishes to produce a thunderstorm.

The first description of an air journey is found in a poem by Kü Yüan, who, having lost his position as statesman by the intrigues of his rivals, found solace from his disgrace by writing. In his poem, he surveys the earth to its four extreme points, travels all over the sky, then descends again in a flying chariot drawn by dragons.

This idea is not alien to Chinese art. An aerial contest between a dragon chariot and winged beings astride scaly and horned dragons is represented on a gravestone of the Han period (second century A.D.)

Huang Ti, one of the ancient legendary emperors, attained immortality by mounting a long-bearded dragon, strong enough to transport his wives also and ministers—more than seventy persons. The officials of lower rank who were not able to find a seat on the dragon's back clung to the hairs of the dragon's beard, like strap hangers in the street cars. These, however, gave way, and the passengers were plunged to the ground, and also dropped the emperor's bow. The multitude of spectators reverentially watched the apotheosis and when Huang Ti had reached his destination, they picked up the hairs and his bow.

When the imagination of a nation is filled with the romance of air, when the very air is populated with winged genii and flying chariots, and when such subjects are glorified by art, it is the logi-

[2]Leonardo da Vinci was the first in our midst to conceive the idea of a parachute.

AERIAL CONTEST OF DRAGON-CHARIOT AND DRAGON-RIDERS
Stone Bas-relief of Han Period, A.D. 147. Shan-tung, China

cal step that imagination leads one or another to attempt the construction of some kind of an airship.

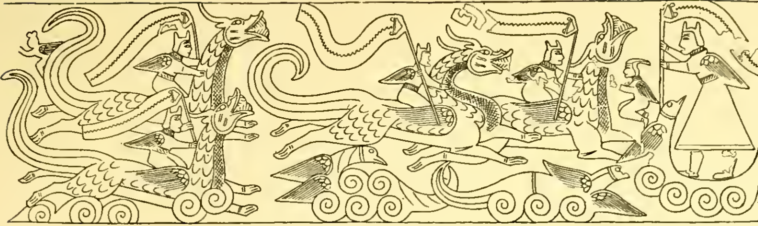
The history of the ancient Emperors, the *Ti wang shi ki*, contains the following notice: "Ki-kung-shi was able to make a flying chariot which, driven by a fair wind, traveled a great distance. At the time of the emperor Ch'eng T'ang the west wind blew Ki-kung-shi's chariot as far as Yü-chou. The emperor ordered this chariot to be destroyed so that it should not become known to the people. Ten years later, when the east wind blew, the emperor caused another chariot to be built by Ki-kung and sent him back in it."

The term "flying chariot" (*fei ch'o*) used in this passage is now current in China to designate an aeroplane.

Another account ascribes this invention to the Ki-kung nation, who are one-armed, three-eyed hermaphrodites. Most likely two distinct legends have here become contaminated.

A wood engraving of Ki-kung's chariot of comparatively recent origin reconstructed from the slender fabric of the ancient tradition is reproduced here. The Chinese draughtsman is decidedly wrong about producing a two-wheeled chariot as the sole indication of motive power given in the account itself is the wind. In ancient China only two devices were known to set a vehicle in motion, namely, a sail and a kite. A sail alone cannot lift a vehicle into the air, but this can be accomplished by several powerful kites. Therefore, Ki-kung's chariot was probably built on the aerostatic principle, being driven by a combination of sails and kites.

Possibly the chariot was similar to the aerial boat designed by Francesco Lana which was to be lifted by four copper globes from



AERIAL CONTEST OF DRAGON-CHARIOT AND DRAGON-RIDERS

which all the air had been extracted. The boat is then propelled by oars and sails.

Kung-shu Tse, a contemporary of Confucius, also called Lu Pan, is said to have carved a magpie from bamboo and wood; when completed he caused it to fly, and only after three days did it come down to earth. According to another tradition, Kung-shu made an ascent on a wooden kite in order to spy on a city which he desired to capture. This invention is sometimes ascribed to Mo Ti, and a greal deal of confusion surrounds the accounts. As early as the first century of our era, real knowledge of this contrivance was lost.

This wooden bird and its affinity, the dove of Archytas, meet with a curious parallel in the west. The astronomer, Regiomontanus, who lived in Nurenberg in the 15th century is said to have constructed an eagle which he sent out high in the air to meet the emperor and accompanied him to the city gates. Considering the fact that such similar contrivances are reported from different parts of the world at widely varying times we cannot help concluding that a grain of truth must underlie these accounts, even though we grant that they are exaggerated. Perhaps Kung-shu's bird was a glider, or perhaps it was attached to or raised by a kite.

Starting from realistic means of flight, Chinese efforts developed into mysticism and magic. In the second century B. C. alchemistic lore began to infiltrate from the west. The notion of flight was a link of paramount importance in the chain of mystic dreams which held the people enthralled for many centuries. Alchemists sought the elixir of life, people ascended to heaven upon drinking concoctions, or upon the back of cranes, of ducks or tigers.

In this later history two singular ideas come to the fore; levitation by means of starvation and by means of remedies taken in-

ternally—live on air to conquer the air. These doctrines and practices of Taoism are partially traceable to India.

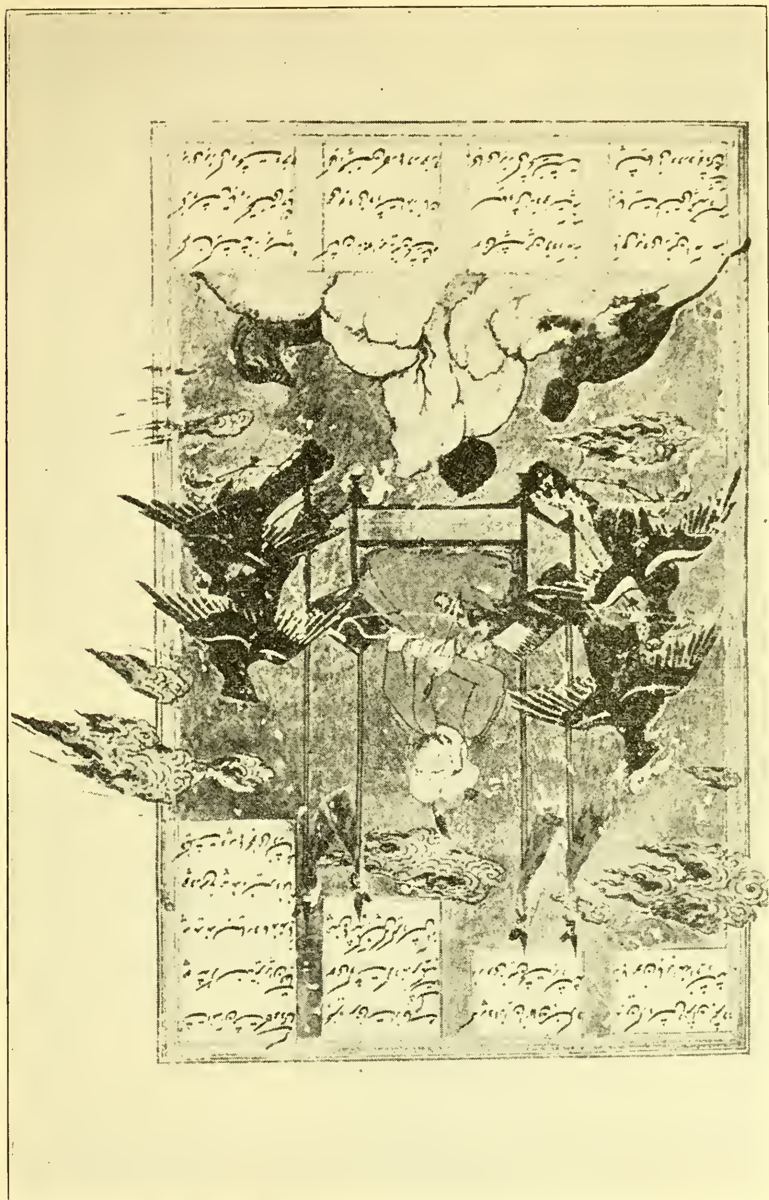
T'ao Hung-king, a distinguished physician and adept in the mysteries of Taoism, compounded a "flying elixir" of gold, cinnabar, azurite and sulphur. It was said to have the color of hoar frost and snow and to have a bitter taste. When swallowed it produced levitation of the body. It is the only example in the history of the world of teaching to fly by means of medicine taken internally.

Kites as Precursors to Aeroplanes

Kites were first invented and put to a practical test in ancient China. The toy we used to fly in our boyhood days is but a poor degenerate orphan compared to the Chinese kites which are wonders of technique and art. The ordinary Chinese kites are made of a light framework of bamboo over which is spread a sheet of strong paper, painted in brilliant hues with human or animal figures. The figures are designed for a distant vista and may seem, at a close proximity, distorted, but from a distance appear most beautiful, and waving and soaring as the kite moves on like a real bird. They are maintained by a long tough cord wound over a reel which is held in the hand and is continually turned as the paper plane rises or falls. The most complicated one of these is the centipede kite. One in the American Natural History Museum in New York measures 40 ft. in length. Mechanically kites are constructed on the principle underlying the behavior of a soaring bird, which performs its movements with peculiar warped and curved surfaces.

The ninth day of the ninth month in the autumn is devoted to the festival called Ch'ung-yang. Friends join for a picnic in the hills and set kites adrift. This also is the day for holding kite contests. The cord near the kite is stiffened with cut glass. The kite-flyer manoeuvres to get his kite to windward of that of his rival, allows his cord to drift against that of his rival, and by a sudden jerk cuts it through, so that the hostile kite is brought down.

A musical kite was invented in the tenth century by Li Ye who fastened a bamboo flute to the kite's head. Sometimes two or three flutes are attached one above the other, more frequently, however, a musical bow made of light willow-wood or bamboo, and strung with a silken cord is attached to the kites.



KAI KAWUS FLIGHT TO HEAVEN
From a Persian Illustrated Manuscript of the Shahnameh, Dated 1587-88
Courtesy of Metropolitan Museum of Art, New York

Courtesy of Field Museum

Kites were originally used for military signaling. The idea that a kite drives away bad spirits is of local and recent development—found more in Korea than in China and bears no relation to the origin of kites, and cannot be clearly traced. They seem not to have existed in times of early antiquity, and therefore they are not mentioned in the treatise on the art of war by Sun Wu in the 6th century B. C.

Kung-shu's wooden bird was not a flying kite. The earliest notion of this looms up in the life of Han Sin who died in 196 B. C., one of the three heroes who assisted Lu Pang in ascending the throne as the first emperor of the Han dynasty. He wanted to dig a tunnel to the palace and in order to measure the distance he is said to have flown a kite. Some say he measured the cord, others say that he ascended the kite, but it is most probable that he introduced kites into warfare using them in trigonometrical calculations of the distance from the hostile army. The story is however not well authenticated for it appears only in comparatively late sources and Han Sin's kite is said to have been made of paper, while paper was invented only 300 years later.

Chinese authors are wont to speak of paper kites. Paper was invented in A. D. 105. Ever since paper has come into use, kites have been made of this material, and no other material has been used for them. But the framework might have been covered by some other light material, silk or hemp. Chinese records, however, are reticent on this point.

From China knowledge of kites was diffused to all other nations of Eastern Asia, that experienced the influence of Chinese civilization such as Korea, Japan, and nearby countries. In some parts of Indonesia, kites are put to the practical purpose of catching fish. Kites were introduced into India through Malay or Chinese immigrants. Kite-flying is a popular amusement in the spring and contests are held for high stakes.

In Siam, kite flying is a state ceremony, as well as a public festivity connected with agriculture and the northeast monsoon.

All data at our disposal goes to prove that the kite spread from the far east westward, to the near east and finally to Europe and makes its debut there as a Chinese contrivance.

In European literature kites are first described by the Italian Giovanni Batista in his book on natural magic, and the Jesuit Athan-

asius Kircher who also wrote a book on China which is based on information received from members of his order working in China. Kites were flown in England as a pastime. In the middle of the seventeenth century they were employed for the purpose of letting off fireworks. They were finally used in Europe by Alexander Wilson and in the United States by Benjamin Franklin for scientific purposes in making temperature and electrical experiments. The classical experiment of Benjamin Franklin which identified lightning with electricity is, of course, well known.

Both in China and Japan there are stories current about men riding on kites. Athanasius Kircher mentions that in his time kites were made of such dimensions that they were capable of lifting a man.

About the year 1826, the principle of the kite was turned to a practical purpose by George Pocock a schoolmaster of Bristol, who found that by attaching several kites one beneath another they could be elevated above the clouds. In January the following year he claimed to have covered several miles between Bristol and Malborough at twenty miles an hour. He proposed to use kites for shipwrecking and to tow boats, and for military purposes to elevate a man for reconnaissances and signaling.

In 1876, Joseph Simmons claims that he was drawn into the air to a height of 600 feet by means of two superimposed kites and adjusting his weight by guy lines to the earth. Others have also reported such success.

Laurence Hargrave, an Australian, introduced a new principle, the cellular construction of kites. This type of box kite formed the starting point of Alexander Graham Bell's researches and construction of tetrahedral and triangular kites. The wings of the modern biplane are closely modeled after the Hargrave box kite. The man-lifting kite has developed into an aeroplane. The speed plane of our day is but a first cousin to the kite.

Another Chinese apparatus deserves mention here as it served as a source of inspiration to Sir George Cayley one of the great pioneers of modern aviation. He says that his first experiments were made with a Chinese aerial top which served at once to illustrate the principle of the helicopter and air-screw. Though but a toy a few inches long, its capacity to demonstrate certain principles in aeronautics made a lasting impression on his youthful mind.

The Dawn of Airships in Ancient India

Although the Aryan Indians of the Vedic period had numerous aerial deities, such as the Gandharvas, elves "haunting the fathomless spaces of air," no allusion is made in the Rigveda to their manner of locomotion. The Vedic gods did not fly, but preferred driving in luminous cars drawn by fleet horses, cows, goats or spotted deer. Indra, the favorite national god, primarily a storm and thunder god, is borne in a golden chariot drawn by tawny chargers as an eagle is borne on its wings, faster than thought.

A myth of post-Vedic times tells of quaking mountains with wings gifted with the power of flight. They flew around like birds, alighted wherever they pleased and with their incessant motion made the earth unsteady. With his thunderbolt, Indra clipped their wings and settled them permanently in their places; their wings were transformed into thunder clouds.

The Açvine (horsemen), the twin dieties, probably representing the dawn and the morning star, traverse heaven and earth in a single day, drawn in a sun-like chariot by horses or birds or swans or eagles. OtherVedic gods, Surya, the sun god, Agni, the personification of the sacrificial fire, drive in chariots or are represented as birds. Pushan, who is closely connected with the sun, moves in golden ships sailing over the aerial ocean. The sun on one hand appears as a boat in which Varuna, the god of the sky, navigated the aerial sea, and on the other hand as a chariot with Varuna as the charioteer. This conception arose from the experience of seeing the sun set in the sea.

The Maruts, the gods of the winds, are described as having yolked the winds as steeds to their pole: that is, their chariot is driven by winds.

In post-Vedic literature the Indians profess to have had two distinct types of flying machines, the Garuda airship of native manufacture constructed on the principle of bird-flight, and the Yavana airship ascribed to the Greeks whose manufacture was scrupulously guarded as a secret. Whether the ancient Indians ever really navigated the air or whether their dirigibles are fiction is irrelevant. The main thing is they had the idea, and their ideas about aeronautics were not worse or more defective than those of Europe from the 16th century to the first part of the 19th century. They saw two points clearly—that aircraft must operate on the principle of

the flight of birds and that a mechanism is required to start the machine, to keep it in midair, and to make it descend. They devoted considerable thought to problems of the air and efforts were made to construct aircraft of various types.

The Greek records are silent as to aircraft, so that we do not know whether the Greeks really, as asserted, did supply them with flying machines. Certainly Greek mechanists and artisans enjoyed a high reputation in India, and marvelous inventions were ascribed to them, such as marvelous automata, movable figures of beautiful women.

The vehicle of the god Vishnu is Garuda, a celestial bird originally a solar bird. This mythological conception proved very fertile in stimulating imagination and according to Indian stories led to construction of airships, and attempts at flying.

The most popular collection of Indian folk-lore contains the story of the weaver as Vishnu. A weaver became infatuated with the king's daughter. His friend, a carpenter, made a wooden airship for him in the shape of a Garuda, which was set in motion by a switch or spring. Equipped with all the paraphernalia of the god, he flew to the seventh story of the palace where the princess had her apartment. She took him for Vishnu, and he married her according to the rites of the Gandharvas (by mutual consent). To her father's questions, she said she was the consort of a god. The king thereupon became overbearing to his neighbors who made war upon him. He implored the pseudo-Vishnu for help through his daughter. He accordingly appeared above the battlefield with bow and arrow, ready to die. But Vishnu, not wishing his authority to suffer among men, as it would if he allowed the weaver to die, entered his body and scattered the enemy. After the victory the weaver told the whole story to the king, who rewarded him and married him to his daughter. The most interesting point to this story is that a garuda is used to rout an enemy.

Another garuda is described in a collection of old Indian stories. The wife of a rich man's son is stolen, and a carpenter's son, to rescue her, builds a wooden Garuda. It is supplied with three springs, one in front to make it go upward, on the side to make it float smoothly along, and one beneath to make it descend.

Again reference to airships is found in a collection of stories

written during the 11th century. Vasavadatta desired to mount an aerial chariot and visit the earth. The carpenters who were summoned said that flying machines were known only to the Greeks. Later in the same story, Viçvila makes an aerial journey on a mechanical cock, but says that the secret should be revealed to no one but a Greek. Pukvasaka, his father-in-law, commanded him to build a flying machine, but Viçvila who had learned the secret from the Greek artisan not daring to reveal it, fled with his wife during the night on the cock, to the country whence he had come. The artisans were flogged; meanwhile a stranger appeared who said, "Do not flog the artisans; I will build a flying machine." In the nick of time he producd a flying machine in the form of a Garuda. When the Queen refused to mount it alone, the stranger said it could carry the entire city. So the king and his personnel, his wives and officials set out and circumnavigated the earth. On his return, he did honors to the craftsman.

In a Sanskrit romance of the 7th century, a king, desirous of marvels, was carried away, no one knows whither, on an aerial car made by a Greek who had been taken prisoner. The term used in this passage means "a mechanical vehicle which travels on the surface of the air."

As regards winged flight, only one example is known to me from Indian literature. The Katha Sarit Sagara contains the following tale: A young Brahman, having seen the prince of the Siddhas flying through the air, wished to rival him, and fastening wings of grass to his side and continually leaping up he tried to learn to fly. The prince took pity on the boy who was making such an earnest effort, and by means of his magic power took the boy on his shoulder and made him one of his followers.

In Indian art, particularly in the sculpture of the Buddhists, winged beings in the act of flying are frequently represented.

Among the marvelous abilities promised as a reward for yoga practice was "traversing the air." What has been observed as flying by modern yogins proved to be hopping close to the surface of the ground without seemingly touching it.

More interesting, however, are two charming motifs of folklore presented by India to the world, magic boots and the enchanted flying horse.

From Babylon and Persia to the Greeks and the Arabs

From the Euphrates Valley large fragments have been recovered of a legend of the sovereign Etana who, as a reward for having helped a wounded eagle, is carried on his back to the dwelling of the gods. They reach the heaven of Anu and halt at the gate of the ecliptic. The eagle is next urging Etana on to the dwelling place of Ishtar, six hours distant, but either his strength is exhausted or the goddess intervenes, for a precipitous descent begins. They fall through space three double hours and finally reach the ground. The close of the story is wanting, but the purpose of the flight has failed.

This is the only record of flight recorded in cuneiform literature. Although it is found in Babylon and several different cylinder seals illustrate the legend, it is thought to be of Iranian or possibly Aryan origin.

There is an ancient Persian tradition of especial interest which was transmitted to Europe at an early date. In the semi-legendary history of Iran, there was a king, Kai Kawus, who was easily led astray by passion. He built seven palaces on Mt. Alburz, then he tried to restrain the demons of Mazandaran, one of which retaliated and sowed the seeds of discontent in his heart, so that he set his mind on attaining supremacy in the celestial abode. He built a throne, supported and raised by four starving eagles. As an incentive for the birds to fly, four pieces of flesh were fastened to the top of four spears planted on the sides of the throne. The flight was of short duration; the strange vehicle soon came down in a crash and the grandees found the king unconscious in a forest.

The Iranian motif of an aerial vehicle lifted by starved eagles was adopted by the Greek Romances of Alexander the Great which became widely known throughout the middle ages.

Of all the flying stories of classical antiquity the one that has left the most lasting impression and inspired the greatest number of imitators is that of Daedalus (Cunning Worker). He incurred the wrath of king Minus and, in order to escape imprisonment, fashioned a pair of artificial wings coated with wax for himself and his son. They mounted and flew westward over the sea. Icarus, however, disregarded his father's advice and flew too near the sun; the wax on his wings softened and melted, and he fell headlong into the sea.

It does not matter if the story is or is not true. It is the flight of human imagination, the impulses and visions of a genius, very often his errors, which have stimulated inventions and progress.

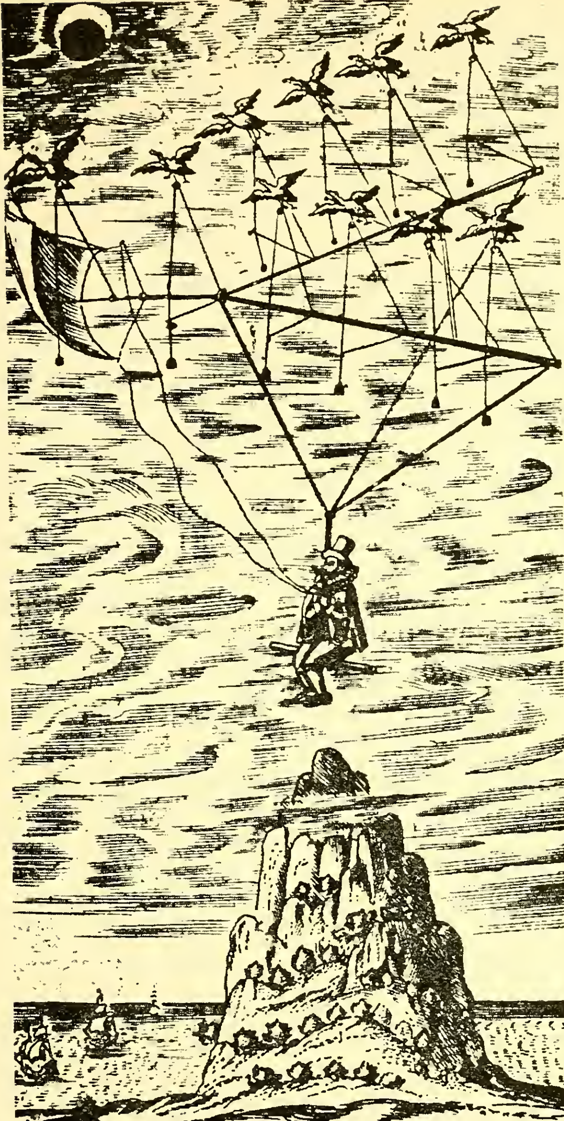
The Daedalus story finds an echo in the Germanic saga of Wayland the Smith, the artificer of marvelous weapons. King Nidung endeavored to keep him in his service by cutting the sinews of his feet, thus laming him forever. Wayland forged a feather robe and revealed his purpose to the king from the tower of the castle and flew home to Seeland.

The most notable of the Greek gods and goddesses who flew through space were Perseus and Hermes with winged helmet and shoes. Fantastic conveyances were used on the Greek stage to give the illusion of persons being lifted upward or descending from the air.

Archytas, a Greek philosopher, mathematician and statesman, who lived in Italy in 428 B.C. attained great skill as a practical mehanician. His flying dove of wood was one of the wonders of antiquity. From the accounts we have, it is not clear just what it was. It is described as being a wooden figure balanced by a weight that was suspended from a pulley. It is said to have soared in the air and been put into motion by a current of air "hidden and enclosed" in its interior. Some scholars incline to the opinion that it was an anticipation of the hot air balloon, others that it was an aerostat or glider, for it is said that it could fly but not rise again after falling. It may also have been on the order of Lu Pan's wooden kite.

Lucian, the delightful satirist and divine liar of the second century of our era, tells of an air voyage where the flyer, Menippus, goes Daedalus one better by refraining from the use of wax. He fastened an eagle's and a vulture's wing to each side by straps with handles for grips. Thus he essayed to fly, at first leaping and flapping, keeping close to the ground as geese do, later becoming bold enough to fly to Olympus, and to the moon. This story gave the impetus to the class of fiction known as "voyages imaginaires."

Such a voyage is described by Francis Godwin in his romance "The Man in the Moone." His hero, Gonzales was abandoned on an uninhabited island, St. Helena. He trained a flock of birds to fly together bearing a burden. Then he devised a mechanism whereby he could distribute his weight at the start of the flight. At first



THE AERIAL VOYAGE OF DOMINGO GONSALES
From F. Godwin's Man in the Moone, 1638

Courtesy of Field Museum

he experimented with a lamb, then he was himself carried aloft. "For I hold it far more honor to have been the first flying man than to be another Neptune that first adventured to sail upon the sea." This sentiment, "to be the flying man," finds its earliest expression here.

The Arabs, heirs to Greek philosophy, and science, made considerable progress in mechanical devices. About the year 875, an Arabian, known as the Sage of Spain, who was the first to manufacture glass, invented a contrivance to make his body rise into the air. He made wings, clothed himself with feathers and flew quite a distance, but as he had not considered what would happen during his descent, he fell and injured his buttocks. He was ignorant, the Arabic chronicler adds, that a bird falls only on its rump, and had forgotten to make a tail for himself.

There is another story of a flying architect from the tenth century, who erected a huge tower for King Shapur I. The king, not wanting anyone else to profit by his genius, left him on the top of the tower. The architect built a pair of wooden wings, fastened them to his body, and driven by the wind, flew to a place of safety. This story bears a remarkable resemblance to the Daedalus story.

In Constantinople, at the festivities held in honor of a visiting Sultan, a Saracen wanted to show his skill in flying. He announced he would fly from the tower of the hippodrome across the racecourse. He was clad in white garments, large and wide, braced with rods of willow-wood laid over a framework. He delayed for a long time and the crowd became impatient; but finally, when the wind was favorable, he soared like a bird and seemed to fly in the air.

Oliver of Malmesbury, an English astrologer of the eleventh century, is said to have attached wings to his hands and feet and attempted to fly off from a tower. He attributed his fall to the lack of a tail. This bears a striking resemblance to the Arabic story above mentioned.

John Damion, an Italian by birth and a physician at the court of King James, claimed he could overtake an embassy to France. He fastened wings of bird feathers on himself and hopped off the top of Stirling Castle, but he fell and broke his legs. He blamed his misfortune on the fact that there were some chicken feathers in his wing which showed a natural affinity to return to the barnyard.

Giovanni Battista Danti, a mathematician of Perugia, is said to have attempted winged flights over the lake Trasimeno.

Roger Bacon was to some extent under the influence of Arabic science. He had all the superstitions of his contemporaries in regard to flying. He suggested that flying machines could be made so that a man "seated in the midst of the machine, revolving some sort of device by means of which wings artificially composed may beat the air after the manner of a flying bird." Bacon's place is at the end of the line in the prehistory of aviation. His ideas of flying are the echo of the ancient idea that we have traced from China and India, Persia and Arabia.

The modern history of aviation begins with Leonardo da Vinci.

The Air Mail of Ancient Times

Air-mail service was first established in the United States in 1918 when the New York-Washington mail route (218 miles) was established. While our air-mail is an epoch-making innovation and an achievement of modern times, there was also a prehistoric air-mail which is no less admirable, carried on the wings of pigeons. This institution we owe also to the Orient.

The first Chinese who made use of carrier pigeons is Chang Kiu-ling (A.D. 673-740) a statesman and poet, who corresponded with his relatives by means of a flock of carrier pigeons, which he called his flying slaves (*fei nu*). The messages were attached to the feet of the birds who were taught how to deliver them. The government of China never employed pigeons for carrying important messages, but their use remained restricted to private correspondence chiefly for bringing news of the arrival of cargoes and the ruling prices of markets.

In India the use of carrier pigeons goes back to great antiquity and may with certainty be assumed to have been in full swing in the beginning of our era. Kings of India received news about the movement of hostile troops by domesticated pigeons. In Indian stories various kinds of birds appear as harbingers of messages, the white wild goose, for instance, the crow, and frequently parrots.

As regards Persia, many pigeons were kept on their sea going vessels, capable of flying several thousand *li* (Chinese miles). These were released and they returned home bearing tidings as it were

that everything on board was well. In medieval times Persian authors repeatedly refer to the conveyance of letters by pigeon mail. The pigeon also appears in love songs as messenger and bearer of love letters.

The use among the Greeks and Romans of carrier pigeons is restricted to isolated instances were news is carried of victory in the Olympian games or to a besieged city. Since there is no mention made of their being trained for message bearing, it was probably of no great significance among the ancients and probably died out during the days of the decline of the Roman Empire.

Mesopotamia appears to be the home of the domesticated pigeon, and the domestication of the bird was accomplished as early as pre-Semitic times by the Sumerians. Among the Semites, pigeons are closely connected with religious practices. They are sacred to the goddess Ishtar. It is unknown when and where pigeons were first trained for conveying messages. Both in Egypt and Mesopotamia the practice was unknown, but it is improbable that the practice could have developed where clay tablets were the common writing material.

The dove which Noah sent from the ark three times represents an entirely distinct class in the category of land-spying birds which navigators released when they had lost their bearings and were in quest of land. These birds never returned to their ships.

In the 9th century when the Vikings sailed from Norway, they kept birds on board which were set free from time to time amid sea, and with their aid, succeeded in discovering Iceland. Land expeditions would also be accompanied by land-spying birds and would settle in a territory where the birds would descend.

In the present state of our knowledge we can only assert with safety that the highest development in the use of pigeon messengers was reached in the empire of the Caliphs and under the Mohammedan dynasties of Egypt, where the whole business was organized and systematized on a scientific basis, while of course, isolated cases occured many centuries earlier. Indo-Iranian peoples may very well have given the first impetus to the training of carrier pigeons. Under the Caliph, Nūr-ed-din a regular air mail was established. Pigeons were kept in all castles and fortresses of his empire. Under the Caliph Ahmed Naser-lidin-allah air mail developed into a regular institution. Although many were engaged

in the business of raising pigeons, their prices reached amazing figures. A well trained pair sold as high as 1000 gold pieces. Bagdad was the central station for air-mail until it was conquered by the Mongols in 1258.

One of the most curious incidents in the history of airmail was when the Caliph Aziz (975-996) had a great desire for a dish of cherries from Balbek. His Vezir caused 600 pigeons to be despatched from Balbek to Cairo each of which carried attached to either leg a small silk bag containing a cherry. This is the first record of parcel post by air-mail.

Stanley Lane Poole, in his "History of Egypt in the Middle-Ages," writes of Beybars (1266-77) "the most famous and energetic of all the Bahri Mamluks, that he established a well-organized system of posts, including the pigeon post....The pigeons were kept in cots in the citadel and at various stages which were farther apart than those of the horses. The bird would stop at the first post-cot where its letter would be attached to the wing of another pigeon for the next stage. The royal pigeons had a distinguishing mark and when one of these arrived at the citadel with a dispatch, none was permitted to detach the parchment save the Sultan himself; and so stringent were the rules that were he dining or sleeping or in the bath, he would nevertheless be informed at once of the arrival and would immediately proceed to disencumber the bird of its message." The letters were written on a fine tissue paper and were fastened beneath the wings and later to the tail feather.

During the middle ages the European nations became acquainted with pigeon air-mail when the cross and the crescent clashed during the Crusades. There are stories on record which depict the wonder and amazement of the Christian soldiers at witnessing this novel experience. They brought carrier pigeons back from the Orient. Medieval knights used them in sending communications from castle to castle. The convents did so also. All pigeons used in medieval Europe for air-mail purposes were of Oriental origin.

The first employment of pigeons for military purposes in Europe was during the siege of Harlem by the Spaniards in 1573. The garrison received advices by pigeon mail announcing the approach of a relief army under the Prince of Orania.

It is said that Rotchschild of London had his agents join Napoleon's army and send him first hand information by air-mail.

whereby he managed his financial speculations. Reuter started his career by organizing a pigeon post from Aix-la-Chapelle to Brussels. A newspaper reporter equipped with a small pigeon cage was not a rare sight. During the siege of Paris in 1870 the only news from the outside world that reached the city was conveyed by the wings of pigeons. In the world war pigeons were extensively utilized and achieved brilliant records of flight under great difficulties.

Pigeons are still bred and kept in large numbers for messenger service and racing. In good weather young birds will fly about 300 miles in seven to nine hours and flights of 600 miles in one day have been accomplished by older birds.

KI-KUNG'S FLYING CHARIOT
Chinese Woodcut from T'u shu tsi ch'eng

Courtesy of Field Museum

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